Heuristic Evaluation of MindCompass

For a more in-depth overview of A9, please refer to the [A9 assignment spec](#).

1. Problem/Prototype Description

MindCompass is an extended reality application which promotes early childhood emotional well-being through gamifying daily meditation routines.

2. Violations Found

Heuristic Violation List:

Task: Walkthrough

1. <u>H12:</u> Value alignment and inclusion / Severity : 3
   a. Task: Have child engage in meditation
   b. Description: Children are new to meditation, and at first glance, meditation seems like nothing more than taking the time to breathe. One important thing that is missing in terms of value alignment is the value of meditation for children.
   c. Rationale: Children want to understand why they should care about meditation and what benefits meditation will add to their life.
   d. Fix: Before starting breathing exercises in the modules, the onboarding process with the character of choice should detail the importance of the meditation module, what the user will learn, and how the module will benefit them.
2. **H2: Match between system and real world / Severity: 2**
   a. Task: Walkthrough
   b. Problem Description: In the profile section on the home page, the phrase "average time" may be somewhat unclear to users.
   c. Rationale: Users can be confused by what "average time" refers to (average time on the app, average time meditating, average time where?).
   d. Suggested Fix: In the walkthrough, maybe add a short blurb about what average time means (average time meditating), or change the phrase to "average meditation time" for clarity.
3. **H4: Consistency and Standards / Severity: 3**
   a. Task: Walkthrough
   b. Problem Description: In the navigation bar and in all other descriptions of the Rewards page, the page is referred to as Rewards, however, in the home page, the button to go to the Rewards page is called "Go to store," which is inconsistent with the rest of the UI
   c. Rationale: Users can be confused by the different names for the Rewards page.
   d. Suggested Fix: Rename the button to "Go to Rewards"
4. **H10: Help and documentation / Severity: 1**

      a. Task: Walkthrough

      b. Problem Description: Lack of clarity in detailing the different sections of the homepage during the initial walkthrough explaining to the user how to navigate the platform.

      c. Rationale: Users may be confused what section the walkthrough is highlighting as there is little contrast when showing, for example, "Profile" versus "Play" (for that particular contrast, the image in the "Play" section is not darkened consistently with the other sections), and may have to go through the walkthrough multiple times due to confusion on what section was what.

      d. Suggested Fix: Add highlighting around the section borders or clearer contrast between the current section being explained versus the other sections to make it clearer which section is being explained.

5. H10: Help and documentation / Severity: 2

      a. Task: Walkthrough

      b. Problem Description: When describing the profile section during the walkthrough, the blurb notes that this is where you can see your "last played character," but the definition of a played character was never defined.

      c. Rationale: Users can be confused what a played character means in the context of this platform, as this was never provided since users going through the walkthrough are most likely newcomers.

      d. Suggested Fix: Introduce the idea of characters first in the profile blurb, and then mention that the profile displays your last played character.

Task: Meditation SetUp

6. <u>H1:</u> Visibility of System Status / Severity: 3

      a. Task: Have child engage in meditation

      b. Description: When adjusting the settings for "Play", the interactive meditation duration slider does not allow the user to see/set a quantifiable number of minutes that they are meditating (unless using the extremes of 5 or 15 minutes).

      c. Rationale: Users have no idea exactly how long they will be meditating for; they only have an eyeball, qualitative estimate.

      d. Fix: Every time the duration slider is moved, there should be a number above the duration bar that changes according to the corresponding number of minutes.

7. **<u>H2:</u> Match Between System & World / Severity: 2**

      a. Task: redirect kids' creative energy into personalizing meditative space

      b. Description: When personalizing the settings for the meditation experience, there is ambiguous wording/meaning around the option "The real world can disappear" and "I want to keep some parts of the real world".

      c. Rationale: A child probably will not understand what these statements mean in the context of the meditation experience. There needs to be a greater explanation around what the "real world disappearing" means.

      d. Fix: Next to these statements, include an information "i" icon that reveals clarification on the statement upon clicking or scrolling on top of the "i".

8. <u>H2:</u> Match Between System & World / Severity : 3Task: redirect kids' creative energy into personalizing meditative space
   a. Description: When adjusting the settings for the meditation experience, clicking music vs no music affects the duration on the slider.
   b. Rationale: Music and meditation duration should be independent of one another. Therefore, adjusting music should not consequently alter meditation duration. This could greatly confuse users with the false implication that there is a relationship between music and duration.
   c. Fix: When the user selects music preferences, the duration slider should not move at all.

9. H3 User Control and Freedom / Severity 2Description: "Music or silence" prompt has an answer switch that is automatically set to user
   a. Rationale: The system state is not immediately clear
   b. Fix: Change the question to "Sound?"

10. H4: Consistency and Standards / Severity: 2 Task: Meditation Set Up
    a. Problem Description: In the walkthrough, back buttons are unfilled with a purple border, but in the set up, they have a white background (along with the exit button).
    b. Rationale: Users might be confused or distracted by inconsistent Back buttons or wonder if they have different functions.
    c. Suggested Fix: Choose one theme for the back/exit buttons (either white background for all or purple outline no background for all buttons).

11. H4 Consistency and Standards / Severity 2Description: Choosing character during customization is prompted by "who do you want to be" then that character talks *at* the user.
    a. Rationale: There's a lack of consistency in the terminology. Is the user playing as the character or being spoken to by the character in the second person?
    b. Fix: Change to "who would you like to guide you?"

12. <u>**H5:**</u> **Error Prevention / Severity: 3**Task: Have child engage in meditation
    a. Description: When adjusting the settings for the meditation experience, there is a logical error where users can select both "full immersion in the world" and "semi-immersive experience".
    b. Rationale: It does not make sense to have a fully-immersive and semi-immersive experience. If the platform proceeds with these settings, it is unknown to the user what they can expect from the experience.
    c. Fix: To prevent this error, XOR logic should be implemented such that the user can only select one or the other option, not both. If none are selected, an error message should be thrown stating the need for the user to select the immersiveness of their XR experience.

13. <u>**H7:**</u> **Flexibility and Efficiency of Use / Severity: 2**Task: Encourage kids' continued meditation with positive reinforcement/incentives.

a. Description: There are a limited number of meditation modules, and users need to continue to reset the settings every time for the same module. Although this is okay for new users, this could be annoying for frequent users who have gone through the same modules multiple times and know their settings preferences.

b. Rationale: Especially as AI-trends are providing better recommendation functionalities, people want their digital tools to remember their preferences and settings to provide recommendation short-cuts for more efficient future usage.

c. Fix: For users who have previously completed the module, save their settings selections and allow the user to choose to auto populate their previous preferences when entering the module again.

14. H9: Diagnose and Recover from Errors / Severity: 4Task: Have child engage in meditation

a. Description: Even without completing the settings section of the meditation set-up, the workflow proceeds. Currently, there are no default settings, so the workflow proceeds without any clear indication of what the resulting experience will look like.

b. Rationale: Without a default setting, this situation leaves the user vulnerable to an experience that is undesirable for them. The settings preferences are set in place to ensure the child has an enjoyable and personalized XR meditation experience, and the lack of settings preferences altogether leaves room for too many unknowns.

c. Fix: When the user presses "Continue" without entering settings preferences, an error message should be displayed alerting the user to input their preferences before progressing to the next step.

15. H11: Accessible Design / Severity: 2Task: Meditation Set Up

a. Problem Description: When selecting the duration of the meditation, sliders can be difficult to manipulate

b. Rationale: Especially since precise durations are probably preferred for meditation sessions rather than approximate durations (which sliders are known to have an advantage for), sliders can hinder users from correctly choosing the duration they want for their meditation.

c. Suggested Fix: Add an option to input text for duration or have a +/- button to additionally control the slider.

Task: Meditation

16. H1: Visibility of System Status / Severity: 3Task: Have child engage in meditation

a. Description: When meditating, the timer does not ever tick down to zero. It is in a continuous state of looping from 4:50 to 4:30 while breathing in and out.

b. Rationale: The user doesn't see an accurate representation of the time left in the session.

      c. Fix: Ensure the clock clearly displays the correct amount of time left in the session; the clock should never tick back up.

17. H1: Visibility of System Status / Severity : 3Task: Have child engage in meditation
    a. Description: The duration time selected is not reflected on the timer; the timer is always set at 5:00.
    b. Rationale: Because the timer is inaccurate/hard-coded, users don't actually have autonomy over how long their meditation experience is.
    c. Fix: The timer should reflect the time that the user designates in the settings.

18. H1 Visibility of System Status / Severity 1 Description: Post meditation instructions first tell the user to carry meditation with them and know that they can return before bringing awareness back to the room.
    a. Rationale: Instructions should be chronological such that all points of the meditation are clear.
    b. Fix: Put the recentering message first.

19. H1: Visibility of System Status; Severity: 2 Task: Have child engage in meditation
    a. Description: The meditation period currently seems like a never-ending cycle of breathing in and out, and there is no visible status to view current and upcoming exercises in the module.
    b. Rationale: Because meditation is a new concept for children, they do not know what to expect from the meditation modules, creating subconscious anxiety about what is upcoming. Allowing users to know what is upcoming in a module allows them to look forward to new activities, retaining and increasing engagement throughout a prolonged period of time.
    c. Fix: In addition to tracking time remaining in the module, there should also be information regarding what breathing exercises/meditation skills are upcoming in the module along with time stamps/durations (ex. Deep breathing- 3.5 minutes, light stretching- 4 minutes).

20. H2: Match Between System & World / Severity: 3 Task: Have child engage in meditation
    a. Description: In the meditation session, there is a large volume of text displayed. This text often contains words that younger children may/may not understand (ex. "Tension", "tranquility)
    b. Rationale: If the user does not understand the text, they are less likely to want to engage with the tool, especially in XR where it is easy to take off the headset entirely if the user does not want to engage anymore.
    c. Fix: Use shorter and simpler text blurbs in the meditation experience with vocabulary geared toward younger students. Instead of using the word "tranquility", the word "calm" could be used. In a more complex version of MindCompass, the experience could be tailored to the user's age where younger children (5-7) go through a much simpler version of the experience than the older children (8-10).

21. H2: Match Between System & World / Severity : 3 Task: Have child engage in meditation
    a. Description: Despite selecting the "play music" option, there is no audio playing.

    b. Rationale: It could potentially be frustrating for a user who focuses best with music but cannot figure out how to enable music.

    c. Fix: Ensure that the workflow upon selecting "play music" is differentiated from the workflow upon selecting "silence" via the onset of music upon start of the module.

22. H3: User Control and Freedom / Severity: 2 Task: Meditation Experience

    a. Problem Description: As the instructions for the meditation experience play automatically, there is no way to go back to a previous instruction if a user wants to review or missed the instruction.

    b. Rationale: If a user were to accidentally tap through an instruction, or wasn't able to fully process the instruction before proceeding, the user might get confused on what they have to do in the meditation experience.

    c. Suggested Fix: Add Back/Next buttons so that users can return to a previous instruction or skip to the next instruction at their own pace.

23. H4: Consistency & Standards / Severity: 3 Description: breathe in and out animation does not match the time duration for which users are meant to breathe in and out

    a. Rationale: Quick flashes around the circle breathe out call on a familiar concept of diaphragmatic breathing animations but do not have the same (or any) meaning here creating confusion about the purpose and intended action.

    b. Fix: Create a visual that matches the intention: a gif that expands with the words breathe in and contracts with the words breathe out. See below for example.

    c.
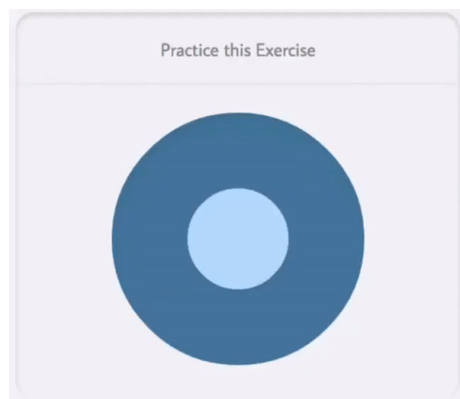
24. H7 Flexibility / Severity 1 Description: At the end of the meditation the only options are to restart the game or view rewards.

    a. Rationale: User might like to return home and play another game. Though the home option is visible after you click restart, restart implies the game will simply begin again without allowing the user to choose something else.

    b. Fix: Allow users to go home after game or change word "restart"

25. **H8: Aesthetic and Minimalist Design / Severity : 2** Task: Have child engage in meditation

    a. Description: When meditating, the bunny seems to arbitrarily bob up and down without matching the action rhythm of breathing in and out.

      b.   Rationale: When the bunny's action mismatches the action words, it can be distracting for the user and can detract from the focus of the meditation experience.

      c.   Fix: When the words say "breathe in", the bunny can bob upwards. When the words say "breathe out", the bunny can bob back down. This creates logical flow conducive to the breathing patterns of the exercise.

26. H9 Recognize, Diagnose, and Recover from Errors / Severity 3Description: After clicking the clock, game immediately ends

      a.   Rationale: Clicking a clock implies that the user can view countdown on a larger screen or see more options. With a stop and pause symbol present, as a user I didn't think clicking the clock would end the game.

      b.   Fix: Let the clock link to a pop up with the countdown in larger numbers of buttons with the option to return to the game, end, etc. below. Or ask whether the user is sure they'd like to end the game first.

27. **H10:** **Help and Documentation / Severity : 2** Task: Have child engage in meditation

      a.   Description: For a child, meditation is a relatively new concept. At first glance, the experience seems nothing more than breathing in and breathing out, an activity that might confuse a child as technically "breathing in and out" is a task that people do anyways to survive.

      b.   Rationale: Children who are especially new to the benefits of meditation need clear instruction and information about how to meditate. Meditation will render ineffective if the child is simply breathing normally the entire module; they need to understand how meditation is distinct from regular breathing.

      c.   Fix: Before entering the meditation, there could be some documentation/additional information about how to effectively meditate. The information could address questions such as, "How to breathe while meditating?" and "Where should I meditate for the best experience?".

28. H11 Accessible Design / Severity 3 Description: Text must be visually read and is sometimes displayed during the meditation period when the user's eyes may be closed.

      a.   Rationale: Users who are still learning to read (ages 5-7), who have a hard time looking at the bright text, or who close their eyes to meditate miss the lovely messages and app guidance.

      b.   Fix: Include and audio reading of all speech prompts during meditation.

Task: Rewards Only

29. **H1:** **Visibility of System Status / Severity: 3**Task: Encourage kids' continued meditation with positive reinforcement/incentives.

      a.   Description: When buying new items with gems, there is no indication of the updated gem count.

      b.   Rationale: Users don't see their purchases reflected on their gem counts; therefore, the gem tracker offers an inaccurate representation of gem ownership/transactions.

      c. Fix: When a transaction is made, the new, subtracted gem count should be reflected across all platform tabs, especially in the navigation bar where the gem count is displayed.

30. H2 Match b/w System and Real World / Severity 2Description: Users unlock an environment or character by pressing a button with a gem on it, a "price", and the word collect.
      a. Rationale: Collect in the other games is already frequently used to mean collect money so this may be confusing to new users.
      b. Fix: Choose a different word that does not imply a marketplace but still implies that the item is being acquired.

31. <u>H2:</u> Match Between System & World / Severity : 3Task: redirect kids' creative energy into personalizing meditative space
      a. Description: Despite buying new characters and unlocking new environments, users cannot "play" with them.
      b. Rationale: The inability to play with new features significantly detracts from the goal of creating a personalized meditative space.
      c. Fix: When users buy a new skin/environment, add the new item to the queue of available characters/environments for play when creating a new meditation session.

32. H3 User Control and Freedom / Severity 1
Description: User can only see a small version of the environment before "buying" it.
      a. Rationale: User may not be able to weigh choices and pick one they like best, especially if they cannot see small details
      b. Fix: Allow previews of the full environment before purchase

33. **<u>H3:</u> User Control & Freedom / Severity: 2**
      a. Task: Encourage kids' continued meditation with positive reinforcement/incentives.
      b. Description: After purchasing a new character or environment, the next steps are not very clear. Despite text instructions, there is no obvious indication/button to proceed in the user experience toward the meditation itself.
      c. Rationale: Upon purchase, the user can feel "stuck"; it seems as if there is nowhere to go and the logical flow of events feels temporarily on pause.
      d. Fix: After purchase, there can be a button that pops up under the confirmation message saying "Continue" which would take the user back to the home landing page where they can choose to meditate and use the newly-bought item.

34. **<u>H3:</u> User Control & Freedom / Severity: 2**
      a. Task: Encourage kids' continued meditation with positive reinforcement/incentives.
      b. Description: There is a chance that a user could misclick and accidentally purchase a new character/environment without intending to. There is also no way to undo this misclick, so the user will be stuck with an item that they did not want to purchase.

c. Rationale: Especially in XR where there is a steep learning curve, misclicks can happen frequently, and it could be frustrating to the user if a misclick results in the reduction of their gems and a new item that they do not want.

d. Fix: A confirmation message asking the user to confirm their purchase before making the sale. This can greatly reduce the impact of one missed click by adding another layer of protection that allows a user to "undo" a mistake.

35. H4 Consistency and standards / Severity 2

a. Description: Collect means collect gems <u>and</u> acquire something with gems

b. Rationale: Intention of each button is not clear to user

c. Fix: Use different words for both actions

36. H4: Consistency and Standards / Severity: 2

a. Task: Rewards Only

b. Problem Description: Navigation bar changes in the Rewards screen to include a dropdown menu for buying items, a profile icon, a gems icon displaying how many gems the user has, and a different look for accessing settings.

c. Rationale: In previous screens, the navigation bar only contains access to the different pages and then to settings. The difference in navigation bar can be distracting to users or confuse them, especially for the settings icon since it is different in the navigation bar in the Rewards screen.

d. Suggested Fix: Since the dropdown menu, profile icon, and gems icon are unique to the Rewards page, place these buttons outside of the navigation bar and embedded into the Rewards page.

37. <u>H5:</u> Error Prevention / Severity: 2

a. Task: Encourage kids' continued meditation with positive reinforcement/incentives.

b. Description: Although there is a color difference in the "Collect" buttons based on whether or not the user can afford the new item in the shop, there should also be a textual difference to further prevent an error message being thrown.

c. Rationale: The word "collect" indicates that the user is welcome to collect their new item, which is not the case for items that the user can't afford. This greatly increases the chances of an error message being thrown due to a user clicking on an item they can't have.

d. Fix: For the items that the user cannot afford, the "Collect" button should instead say "Locked" so users don't feel tempted to click on an item that they cannot access.

38. H6: Recognition rather than recall / Severity: 2

a. Task: Rewards Only

b. Problem Description: The default character Rain is not displayed as unlocked.

c. Rationale: Users might not remember if they unlocked Rain or not, especially since in the environments page, the default environment Forest is displayed as unlocked, which can confuse users into thinking they didn't unlock Rain.

d. Suggested Fix: Include Rain as an unlocked character in the Characters page.

All Tasks

39. H4: Consistency & Standards / Severity: 3
   a. Task: N/A- Settings
   b. Description: The navigation bar is at the bottom of the screen on the landing page and meditation workflow pages but is at the top of the page for other screens (i.e. "rewards").
   c. Rationale: From a UX perspective, this can make the workflow seem disjoint as the user can see the navigation bar hop from top to bottom and vice versa.
   d. Fix: Be consistent in the location of the navigation bar. I would personally suggest keeping the navigation bar at the top as it is the current standard for most digital applications and thus users will intuitively know where to find the navigation bar.

40. H4: Consistency & Standards / Severity : 2
   a. Task: N/A- Settings
   b. Description: The role of the color pink vs the color purple is not clear. Based on the home tab, it seems like pink means "selected", but this logic is not paralleled on the "rewards" or "settings" tabs.
   c. Rationale: Currently, the pink vs purple color choice seems a bit arbitrary. This could be unintentionally confusing to the user as there is usually consistent change in color when making a selection on web/mobile applications.
   d. Fix: Choose a specific role for each color. For example, if pink means "selected" and purple means "unselected", be consistent with these color definitions across all of the tabs.

41. H4: Consistency & Standards / Severity : 2
   a. Task: N/A- Settings
   b. Description: The profile and gem icons are included on some of the navigation screens, but not all (ex. Home page vs rewards page).
   c. Rationale: The navigation bar should be consistent across all screens; this is the standard convention across current digital applications. This allows the user to have access to all platform functionalities on every screen.
   d. Fix: Include the profile and gem icons on all of the navigation bars across tabs; they should also be located in the same place on each tab to avoid a disjointed UI.

42. H4: Consistency & Standards / Severity : 1
   a. Task: N/A- UI
   b. Description: There is inconsistency in the weight of rounded corners of the "collect" buttons on the Rewards tabs. Some of the collect buttons have sharp corners while others have rounded corners.

    c.   Rationale: There should be consistent style across all buttons on the platform. This prevents a user from fixating on UI errors which hinders progress in achieving the main tasks.

    d.   Fix: Ensure all buttons have the same weight of rounded corners.

43. <u>H4:</u> Consistency & Standards / Severity : 2Task: N/A- UI

    a.   Description: There is inconsistency in font sizing. Headers, subtitles, and body text do not have a standard font size. This can be seen on the homepage where the text appears to have many different sizes and alignments.

    b.   Rationale: Lack of text standardization can create a disjointed appearance that is not attractive/engaging for users.

    c.   Fix: Ensure all text categories are the same size. For example, headers can be 48 point font; subtitles can be 32 point font; and body text can be 28 point font.

44. <u>H4:</u> Consistency & Standards / Severity : 1Task: N/A- UI

    a.   Description: On the "meditation complete" pop-ups, there is inconsistent text alignment. The top line is centered while the bottom line is left-aligned.

    b.   Rationale: The lack of standard text alignment on a screen can seem off-putting and it can detract from a clean UI that keeps users engaged.

    c.   Fix: Center-align both the top and bottom lines of text on all the "meditation complete" pop-up screens.

45. <u>H4:</u> Consistency & Standards / Severity : 1Task: N/A- UI

    a.   Description: The profile and gem buttons are misaligned on the navigation bar (not center-aligned).

    b.   Rationale: Lack of alignment makes the UI seem "scrappy" which can negatively impact the enjoyability of user experience.

    c.   Fix: Make the navigation bar an "auto-layout" to ensure all items within it are center-aligned on the same axis.

46. H5 Error Prevention / Severity 2Description: There are few escape options after a misclick.

    a.   Rationale: A user may easily get trapped into one task flow when they may have had different intentions.

    b.   Fix: Include visible back buttons.

47. <u>H6:</u> Recognition rather than Recall / Severity : 2Task: Encourage kids' continued meditation with positive reinforcement/incentives.

    a.   Description: Although my profile shows how many days that I have meditated, there is no indication that I have completed the "forest" module. There are no specific details about what I have accomplished.

    b.   Rationale: Because there is no log of what I've done, I have to remember and recognize which modules I've completed in the past. This could result in a bothersome, time-consuming "trial and error" methodology where users have to

"test-out" the available worlds to try and remember which ones they have done before and their prior experience in the world.

    c. Fix: An addition to the user profile which summarizes which modules the user has accomplished in the past. Additionally, there should be a short summary about the module before entering the world so that the user remembers the module goals.

48. <u>H8:</u> Aesthetic and Minimalist Design / Severity : 1
    a. Task: N/A- UI
    b. Description: The navigation bar includes a "settings" functionality that is not clickable.
    c. Rationale: From the user perspective, I tried to click on this functionality, but quickly realized that it was not a clickable element. The settings feature doesn't add additional value/functionality to the outlined task goals.
    d. Fix: Remove all functionalities (incl. settings) that do not have a workflow to prevent misclicks.

49. <u>H8:</u> Aesthetic and Minimalist Design / Severity : 1
    a. Task: N/A- UI
    b. Description: Many of the buttons throughout the experience (pause/stop button, "Collect", etc) blend into the background.
    c. Rationale: When the buttons blend into the background, it makes the experience feel very 1-dimensional which detracts from the XR experience that builders are trying to achieve.
    d. Fix: Use a drop shadow to make buttons "pop".

50. <u>H8:</u> Aesthetic and Minimalist Design / Severity : 2
    a. Task: N/A- UI
    b. Description: During meditation, the countdown timer's clock icon is rubbing up against the top of the button.
    c. Rationale: From an aesthetic point of view, this clash is not pleasing to the eye and makes the experience seem "rough" and unfinished.
    d. Fix: Make the button an "auto-layout" so the clock can be centered no matter what the dimension of the icon is.

51. H8 Aesthetic and Minimalist Design / Severity 2
    a. Description: Forest environment contains stream, plants and many animals, all colorful and unique.
    b. Rationale: While the design of each element is appealing and exciting, it is concentrated in a way that it is a slightly visually overwhelming mix.
    c. Fix: Increase the number of trees, spread out the animals, adding more swaths of the same element (plants) and spreading out pops of other elements for a more cohesive look.

52. <u>H11:</u> Accessible Design / Severity : 2

    a. Task: N/A- color scheme
    b. Description: The current platform is hosted in dark mode which can present accessibility challenges for children with astigmatism.
    c. Rationale: Although dark mode can be conducive to the idea of "entering another world", the platform should not exclude those who have visual impairments.
    d. Fix: Allow the user to choose whether they would like a light mode or dark mode experience in the onboarding process.

53. H11 Accessible Design / Severity 2
    a. Description: During customization, rewards, and meditation there are several little places where a user may get lost or confused. A child may also not know how to meditate.
    b. Rationale: User must look around to understand features but with the lack of back buttons this may be frustrating when buttons don't lead to intent.
    c. Fix: Add help page (or readme!) to homescreen detailing general how-to-use after initial tutorial

54. <u>H11:</u> Accessible Design / Severity: 3
    a. Task: N/A- color scheme
    b. Description: During the meditation process, the white text on pink background is difficult to read.
    c. Rationale: There is not enough color contrast between pink and white for readability, especially with the large volume of text.
    d. Fix: Black text on a white background may be optimal for readable color contrast.

55. <u>H12:</u> Value alignment and inclusion / Severity: 2
    a. Task: Have child engage in meditation
    b. Description: During the meditation process, the time that each user has to read the text bubbles is hard-coded. Therefore, all users have to read within the hard-coded time frame.
    c. Rationale: Especially at a young age, children read at different speeds. Therefore, a hard-coded reading frame could exclude slower readers which would discourage them from engaging with the platform.
    d. Fix: Rather than hard-coding a reading time frame, allow the user to read at their own pace. Implement a button saying "Next" that the user can click on when they are done reading the current text segment.

56. <u>H12:</u> Value alignment and inclusion / Severity: 3
    a. Task: N/A
    b. Description: One thing that felt missing from the experience was the lack of brand identity for MindCompass.
    c. Rationale: Brand identity is an important demonstration of a group's values and motivations for developing a product. The lack of brand identity may cause the

          user to feel a disconnect between MindCompass and what the product actually is.

    d. Fix: Weaving in the MindCompass name and logo throughout the user experience. More clearly define platform goals and benefits for caregivers and children in the app

57. H12: Value Alignment and Inclusion / Severity: 2
    a. Task: All tasks
    b. Problem Description: The reward system doesn't reflect the benefits of meditation and emotional regulation to users.
    c. Rationale: While the current gem reward system incentivizes users on a material scale, reflecting the gamification system, the reward system doesn't really explain or show users why meditation is beneficial to them beyond a material scale, which can be in conflict with the purpose of the app.
    d. Suggested Fix: Alter the reward system to reflect on a deeper level why meditation can be beneficial to users (ex: letting gems unlock chapters of a narrative with a moral of meditation being good).

3. Summary of Violations

A Google Sheet Template is provided here to help you calculate numbers.

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	4	0	**6**
H2: Match Sys & World	0	0	3	4	0	**7**
H3: User Control	0	1	4	0	0	**5**
H4: Consistency & Standards	0	3	7	3	0	**13**
H5: Error Prevention	0	0	2	1	0	**3**
H6: Recognition not Recall	0	0	2	0	0	**2**
H7: Efficiency of Use	0	1	1	0	0	**2**
H8: Minimalist Design	0	2	3	0	0	**5**
H9: Help Users with Errors	0	0	0	1	1	**2**
H10: Help & Documentation	0	1	2	0	0	**3**
H11: Accessible	0	0	3	2	0	**5**
H12: Value Alignment & Inclusion	0	0	2	2	0	**4**
Total Violations by Severity	**0**	**9**	**30**	**17**	**1**	**57**

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)**

4. Evaluation Statistics (in %)

Severity /	Evaluator A Abbie	Evaluator B Susan	Evaluator C Esi

Evaluator			
Sev. 0 Ex: Eval A count / total sevs 0 in table #3	*0%*	0%	0%
Sev. 1 Ex: Eval A count / total sevs 1 in table #3	56%	33%	33%
Sev. 2 Ex: Eval A count / total sevs 2 in table #3	50%	43%	40%
Sev. 3 Ex: Eval A count / total sevs 3 in table #3	76%	29%	29%
Sev. 4 Ex: Eval A count / total sevs 4 in table #3	100%	0%	0%
Total (sevs. 3 & 4) Ex: Eval A = sum(sev 3: sev 4 counts) / sum(sev 3: sev 4 in table #3)	(13+1)/18 = 78%	5/18=28%	(5 +0)/18 = 28%
Total (all severity levels) Ex: Eval A total sev count / total sevs (green cell) in table #3	34/57 = 60%	21/57=37%	20/57 = 35%

***Note that the bottom rows are *not* calculated by adding the numbers above it.**

5. Summary Recommendations

Great job overall! We loved the inviting layout, warm messages, fun characters and environments, and the simple and concise design of the platform. We noticed some general trends that might be nice to address.

First, we noticed some potential concerns in regards to target audience. The target audience is 5-10 years old, and the bright colors and interesting landscapes appeal well to your target audience, but the infantilized (but adorable!) characters themselves seem to appeal to a younger audience of age 2 - 7 years old, very reminiscent of Disney Junior. While we liked the black background overall, we were concerned that it appeals more to an older audience. Second, there seemed to be a decent amount of consistency issues in regards to text size, text alignment, color choices, button colors/iconography (ex: the Back button being white versus transparent with purple outline in different task flows), and the position of the navigation bar. There also seemed to be some errors that could mislead users into clicking the wrong things, such as in the rewards page (accidentally collecting a character they don't want), without the option to undo them, and some logical errors in the meditation set up.

We also had some notes on how the design attempts to achieve the app purpose, as there seem to be some disconnects between the meditation goal and gaming theme along with how meditation will become important to children through this app. We wonder how the platform can incorporate the values of meditation— calm, grounding, etc. —- more into the design. It seems we're asking kids to both upregulate with all the stimulation and down regulate for a peaceful meditation. In addition, we hope that the meditation process and reward system can better answer why meditation would be important to a child and what they would gain from meditation. We think that this could help create a cohesive brand identity and also achieve the app's purpose more effectively, making each task more effective as well. We also wondered how parental input might be incorporated into your platform; although your team mentioned that this app is meant to be an independent app for children, with regards to your team value of safety, we wondered if there were ways to include some parent input to customize certain settings in a way that they can imbue their own values into teaching their children.

Overall, we really loved your platform and it was incredibly well-built; we're all curious to see how your team will implement this!

Severity Ratings

  0 - not a usability problem
  1 - cosmetic problem
  2 - minor usability problem
  3 - major usability problem; important to fix
  4 - usability catastrophe; imperative to fix

Heuristics

H1: Visibility of System Status
- Keep users informed about what is going on

H2: Match Between System & Real World
- Speak the users' language
- Follow real world conventions

H3: User Control & Freedom
- "Exits" for mistaken choices, undo, redo
- Don't force down fixed paths

H4: Consistency & Standards
- Words, actions, and UI elements should be consistent across the entire platform
- Follow platform and industry conventions

H5: Error Prevention
- Minimize error-prone conditions
- Remove memory burdens, support undoing, and warn your users when necessary

H6: Recognition Rather Than Recall
- Make objects, actions, options, & directions visible or easily retrievable

H7: Flexibility & Efficiency of Use
- Accelerators for experts (e.g., gestures, keyboard shortcuts)
- Allow users to tailor frequent actions (e.g., macros)

H8: Aesthetic & Minimalist Design
- No irrelevant information. Focus on the essentials.

H9: Help Users Recognize, Diagnose, & Recover from Errors
- Error messages in plain language
- Precisely indicate the problem
- Constructively suggest a solution

H10: Help & Documentation
- Easy to search
- Focused on the user's task
- List concrete steps to carry out
- Not too large

H11: Accessible
- Users can interact with the system using alternative input methods.
- Content is legible with distinguishable contrast and text size.
- Key information is upfront and not nested for screen readers.

Assignment 9 (Heuristic Evaluation Group Template)

- Purely visual or auditory content has text-based alternatives for users with low vision and low hearing.

H12: Value Alignment and Inclusion
- The design should encode values that users can understand and relate to.
- It should make a diverse group of users feel included and respected.
- The design should prevent the reproduction of pre-existing inequities and not create additional burdens for members of disadvantaged populations.