

DGMD E-55
Final Project Summary Report
[RecyclEd](#)

How would you describe the product to someone you've never met?

Recycling rules can feel overwhelming. But it should be much easier to implement in an office environment, since they usually have a pre-set list of items and three clear bins for sorting.

RecyclEd is an educational website for employees in Seattle offices that provides a quick way custom way to learn about sorting only for the items *they* actually use. The website allows to create a custom recycling cheat sheet and learn about general sorting rules, and creates sense of community by pledging to sustainable actions with your teammates.

Who are the primary & secondary audiences?

- The primary audience is employees of Seattle offices, age 20-50, residing in Greater Seattle Area, who have good familiarity with technology, and an environment for sorting in their offices
- The secondary audience is employees of Seattle offices of age 50+ and people who are not familiar with sorting in general and would not be as intrinsically motivated

Why did you choose the medium? Justify why it is best for your target audiences.

Website would be easily accessible for everyone in the workplace. It's interactive from your laptop, can be shared amongst people, can be integrated into onboarding materials and easily bookmarked. Moreover, since of the benefits of the tool is creating your personal "cheat sheet", it's easier to look up or print from laptop.

← Backward design

What are the **terminal** and **enabling** objectives of the product? Provide evidence of how the product supports each objective.

| Terminal & Enabling Objectives ¹ | How does your product design support the objectives? (Explain the learning experiences you've designed for each) |
|--|--|
| <p>Terminal Objective 1: After participating in the educational game and reviewing sorting rules for their most commonly used items, the users will be able to sort those correctly and confidently</p> <ul style="list-style-type: none"> ● Enabling 1.a: Remember the items by their categories ● Enabling 1.b: Recognize common patterns in recycling rules and be able to recall them ● Enabling 1.c: Apply learned rules in every day life and feel confident about selecting the right sorting method | <p>The website allows users to test their sorting skills through a game as many times as they like (with unlimited attempts), so they can practice and memorize the items they've chosen.</p> <p>Their personal cheat sheets will also help with the visual memorization of the items per their categories and help in application of those rules every day (by printing or bookmarking the PDF).</p> |
| <p>Terminal Objective 2: Users will be able to apply common rules of recycling to unfamiliar products</p> <ul style="list-style-type: none"> ● Enabling 2.a: Locate sources of information for new recycling rules ● Enabling 2.b: Extrapolate general principal rules and apply them to new products ● Enabling 2.c: Give examples of items in each sorting category based on common rules | <p>The "Learn" section includes section for "Common Rules" that not only goes into general facts about sorting in each category that they can apply to unfamiliar products, but also explains the "Why?" behind it, so they're able to better remember and apply those principles in new situations.</p> <p>The website also includes dedicated "Resources" tab, as well as lot of useful information in "Learn", so the users know where to look up new info.</p> |
| <p>Terminal Objective 3: Users will be able to advocate for sorting in the office and educate those around them on the importance of recycling</p> <ul style="list-style-type: none"> ● Enabling 3.a: Take responsibility for sorting of the items they use daily ● Enabling 3.b: Promote correct behavior by leading by example and feel proud about it ● Enabling 3.c: Advise others on recycling methods and justify the method by providing objective facts | <p>Steps "Pledge" and "Advocate" in the website focus on social aspect of learning and touches the human dimension of the experience.</p> <p>By pledging themselves, users create a sense of commitment. By engaging in a competition between offices and teams they feel more engaged to promote same behavior in others. By easily being able to share the website they can advise others and quickly point them to resources.</p> |

¹. *Useful Verbs for Dee Finks Taxonomy of Significant Learning.*

Which **taxonomy** (Bloom's, Fink's, or Six Facets of Understanding) informed the design of the product? Explain how you've integrated each taxon/dimension/facet. If a taxon/dimension/facet is not used, explain why.

I used **Fink's taxonomy**¹ as the main framework for this product, because the end goal of the app is behavioral change around everyday recycling habits and Fink's taxonomy focuses on significant learning (the motivation for which should come from within).

All **six facets** apply to the idea of the app. Users need to:

1. have the foundational knowledge of recycling rules → section "Learn" provides quick and useful facts about recycling
2. apply those to make decisions correctly → the game in "Learn" section simulates the real-world conditions
3. integrate new habits into their life → printable custom "cheat sheets" help with everyday decisions
4. care about the impact of their actions → section "Pledge" makes them accountable for their actions
5. have human dimension to incentivize others to recycle better and self-reflect on their actions → "Pledge" section allows them to choose their personal reason for pledging
6. learn how to learn information for the unknown areas → the website includes dedicated "Resources" tab, as well as lot of useful information in "Learn", so the users know where to look up new info

1. "Fink's Taxonomy of Significant Learning." Intentional College Teaching, intentionalcollegeteaching.org/finks-taxonomy-of-significant-learning/.

What learning theories (behaviorism, cognitivism, constructivism, connectivism, multiple intelligences) informed the design of the product & how does your product incorporate them? Provide clear connections.

Behaviorism

I use behaviorism approach at the very first step of the website, where users select their desired items and simply play a game of sorting them into the right bins. With enough repetition and trying out different items, they will supposedly just get it into their "muscle memory" and will at least learn how to properly sort those specific items.

Users are also presented with an option to create their custom cheat sheets with personal items and sorting rules, which helps reengage with content and practice the new behavior every day.

Cognitivism

Cognitivism is introduced as a second additional layer for my learnings, where users can also read why certain items go where they go (section "Common Rules" and "General Items" in Learn step), so they would now be able to extrapolate their knowledge and apply it to other scenarios: other trash items, other environments.

Constructivism

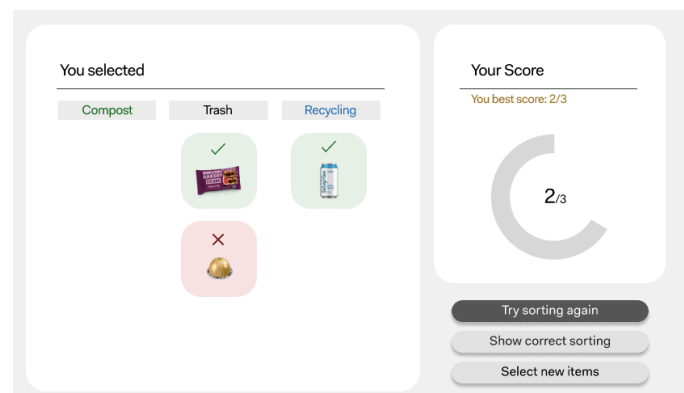
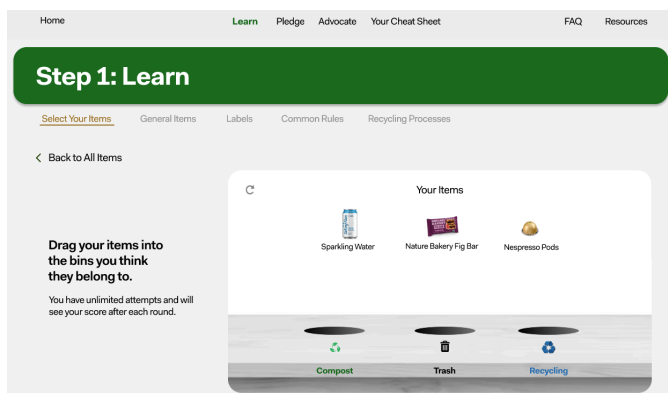
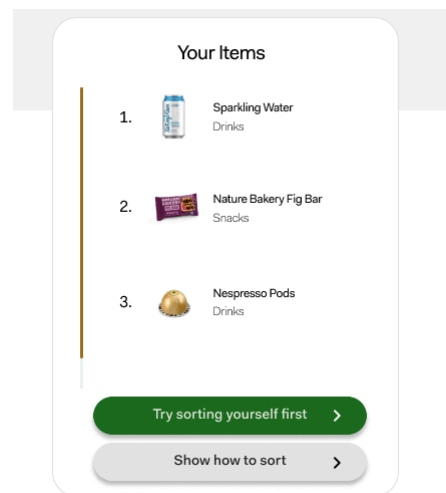
For constructivism, my website has a couple of things. Firstly, they pledge to actually do recycling every day, which is supposed to create a more learner-focused environment and make them care about the materials more. Secondly, I provide all additional resources on how to learn more about recycling, giving them the opportunity to learn how to learn.

Educational design choice #1 (based on course materials)

The **game** included in learning experience makes the process more fun and engaging. The experience is supported by **four freedoms of play**¹:

1) the freedom to fail (users have unlimited attempts and are not penalized for mistakes),
 2) freedom to experiment (users can select any items and however many),
 3) freedom to identify (the game doesn't track users' record under their personal name, so they can "pretend" to be anyone and select their items or decisions accordingly),

4) freedom of effort (after each attempt users have an option to "show answers" – or at the beginning of learning they don't even need to try the game and they can skip it – which allows them to put as much effort as they wish by selecting their own items and always having an option for showing answers. This design was also supported by **user testing**, since users expected different flows from the sorting step: some wanted to try out their knowledge first and some wanted to see the answers. So the website supports both options.

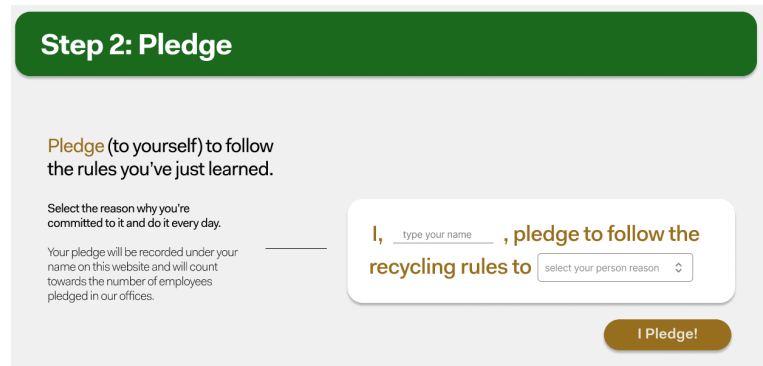


¹ Plushnuggets. "What Is Play - the 4 Freedoms of Play." Plush & Nuggets, 19 Feb. 2019, www.plushnuggets.com/blog/2019/02/19/the-4-freedoms-of-play/. Accessed 1 May 2024.

Educational design choice #2 (based on course materials)

An important step in the educational journey of the website is Step 2: Pledge, where you automatically land after learning about the items. **Fink's Taxonomy**¹ talks about importance of **Caring** and **Human Dimension**, asking questions like "What changes, values, or interests do you hope students will adopt?" and "What should students learn about themselves?".

By inputting their name in the statement, choosing their own category for reason behind it and clicking on "I Pledge" they take more accountability for the learning they've completed in previous section and bring the knowledge from the website to their real world – they have now committed to doing it outside this website and game.



Step 2: Pledge

Pledge (to yourself) to follow the rules you've just learned.

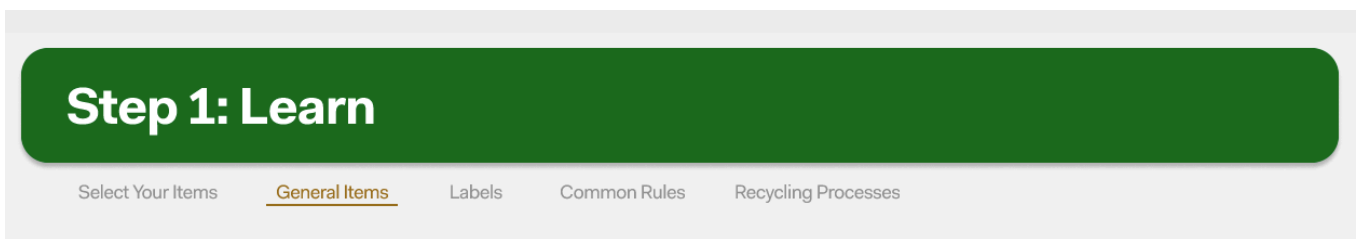
Select the reason why you're committed to it and do it every day.

I, , pledge to follow the recycling rules to

Your pledge will be recorded under your name on this website and will count towards the number of employees pledged in our offices.

I Pledge!

Educational design choice #3 (based on feedback from target audience)



Step 1: Learn

Select Your Items General Items Labels Common Rules Recycling Processes

After user testing, I have made the decision to split the learning materials into clear chapters to allow users to explore what they'd like to learn. This design is supported by **The Segmenting Principle of Mayer's principles**², as well as feedback in **user testing**.

During testing, all users expected different information in vague "Learn More" buttons, which was confusing to them for navigation and product expectation. Chunking the materials into categories with clear labels allows them to make that decision on what information they want to consume.

¹"Fink's Taxonomy of Significant Learning." *Intentional College Teaching*, intentionalcollegeteaching.org/finks-taxonomy-of-significant-learning/.

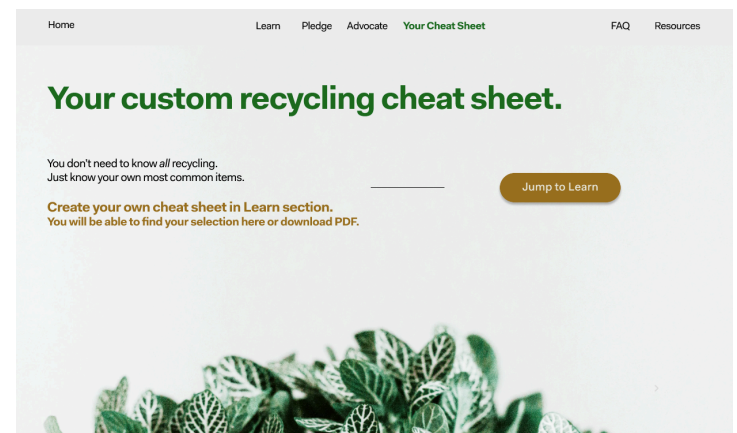
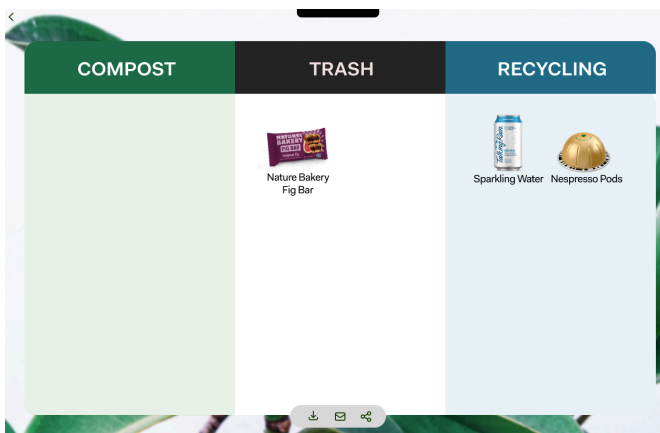
²Davis, Galen, and Marie Norman. "Principles of Multimedia Learning." Center for Teaching and Learning | Wiley Education Services, 2016, ctl.wiley.com/principles-of-multimedia-learning/.

Educational design choice #4 (based on feedback from target audience)

During **user testing**, most participants wanted to have a quick “cheat sheet” to return to reenforce learning. This is also supported by the **behaviorism**⁴ approach that supports the idea that new behavior is acquired through associations between stimuli and responses.

So, by creating a quick way to reengage with learned content day to day, users can better memorize the sorting of their items and practice that behavior every day.

There are also options on quickly downloading other learning information in PDF format to print or bookmark for reinforced learning.



4 Kelly, James. “Learning Theories Behaviorism, Cognitive and Constructivist.”

Thepeakperformancecenter.com, Sept. 2012, thepeakperformancecenter.com/educational-learning/learning/theories/.

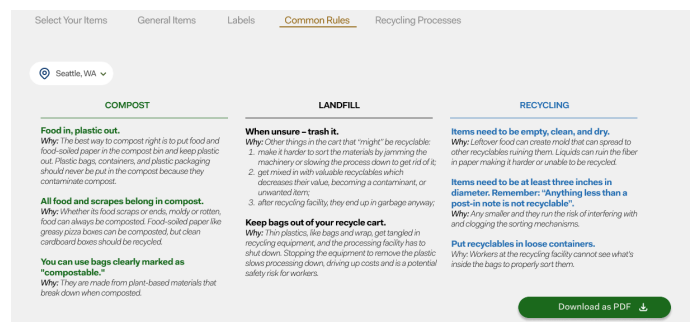
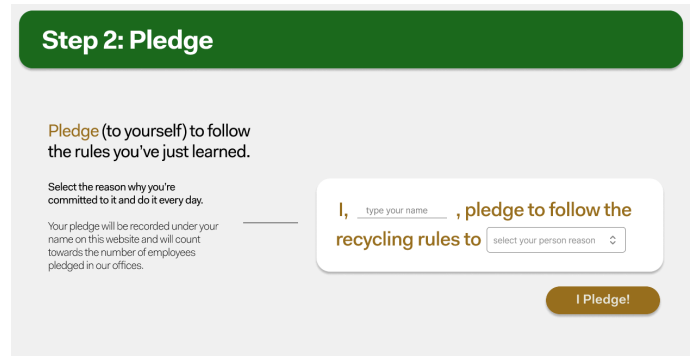
User experience choice #1 (based on course materials)

I have followed **Steve Krug's** approach for **web design**¹. In particular, some principles used are:

1) **Design for scanning, not reading** and **Less is more** – the website minimizes paragraphs and text blocks and communicates most actions through buttons and color-coding (especially connecting all “main” steps of the website through the golden color theme). Each page usually also has one colorful action button that implies the “main” action on the page.

2) **Make clicks mindless** and **Help users to easily navigate** – the website allows moving between pages seamlessly and exploring content in any preferred way to allow users to click through any content that might catch their eyes. The header highlights the page they are on to help users navigate, similar with underline design and color-coding in Learn sub-tabs.

3) **“The whole motive behind user experience is to make users feel good about the product”²** – that’s why even the prototype is complete in such a way that users can interact with it fully on their own and not have to “visualize” any missing steps, pages or scenarios of the actual website. It’s also complete in a nice way aesthetically and doesn’t look like a wireframe, because that does make a difference to how people perceive the capabilities of a tool.



Krug, Steve. Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability. 3rd ed., Berkeley, Calif., New Riders, 2014.

Ambekar, Aniket. “Lessons Learned from the Book “Don't Make Me Think” by Steve Krug.” Medium, 8 May 2018, medium.com/@aniket.ambekar/lessons-learned-from-the-book-dont-make-me-think-by-steve-krug-8eddc339d213.

User experience choice #2 (based on course materials)

I have followed **Peter Morville's User Experience honeycomb**¹ framework to make sure my website connects Content, Context and Users.

1) The website is **Usable**, since it's clean in its navigation and clearly outlines the steps and expectations for the user.

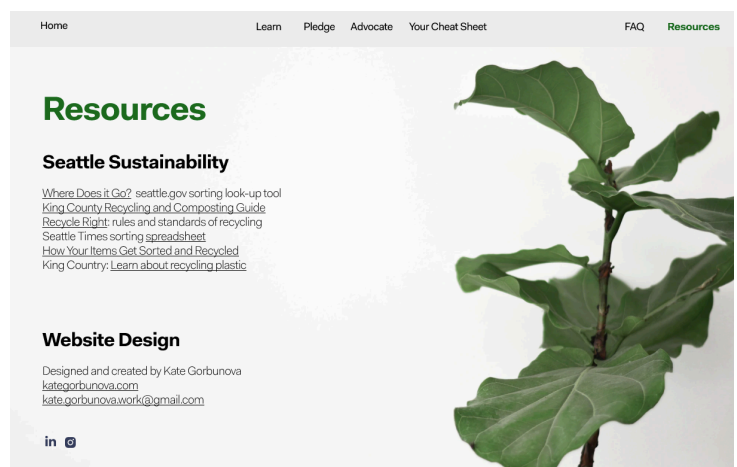
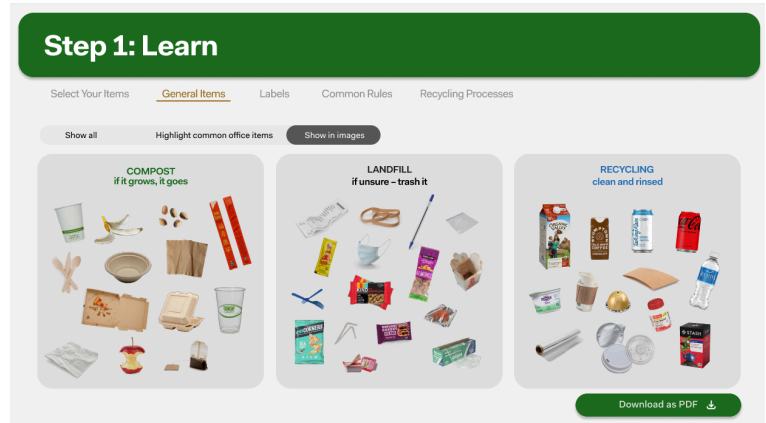
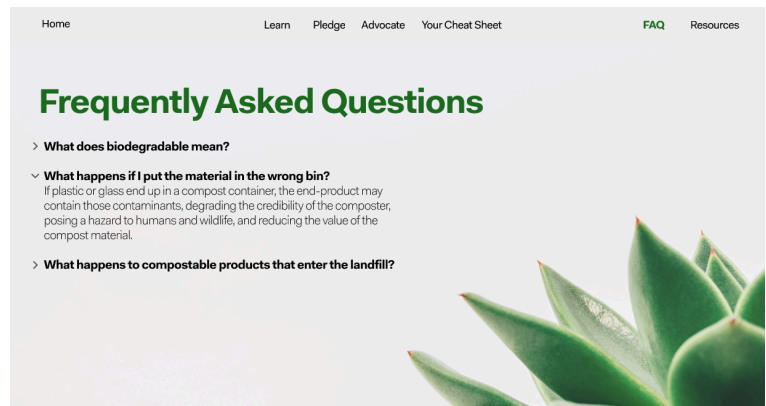
2) The website is **Useful**, because it provides custom learning experience, links to useful materials and easy-to-understand graphics and facts.

3) The website is **Desirable**, because it has consistent color palette (colors were selected through a special tool to be complimentary), the design is minimalistic, website uses high-resolution images and has rounded corners.

4) The information on the website is **Findable**, since website navigation allows users to jump back and forth between pages and all learning sections are clearly marked in their headers.

5) Website is **Accessible**, since it uses high-contrast colors, big font (or scaling options) and images for easier learning.

6) Website is **Credible**, which is very important in educational material like this, since it clearly links all resources at the bottom of "learn" pages and in a separate tab for Resources. Moreover, if this was part of onboarding materials for the new offices, the information about items in the offices would be provided by the facilities teams, which would mean high credibility.

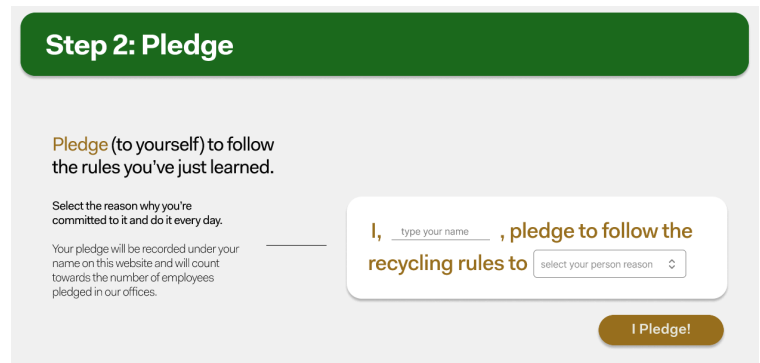


Wesolko, Dane. "Peter Morville's User Experience Honeycomb." Medium, 27 Oct. 2016, danewesolko.medium.com/peter-morvilles-user-experience-honeycomb-904c383b6886.

User experience choice #3 (based on feedback from target audience)

During **user testing**, the majority of participants were unsure about the meaning of the button “I pledge” since the initial prototype did not include information on the level of commitment they were signing up to and the participants didn’t know what exactly they were pledging to.

For this reason, I explicitly state “pledge (to yourself)” to signal it’s just a personal commitment, and also describe exactly what that action leads to: “Your pledge will be recorded under your name on this website and will count towards the number of employees pledged in our offices.”



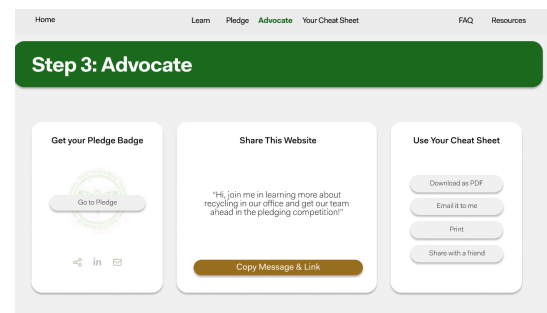
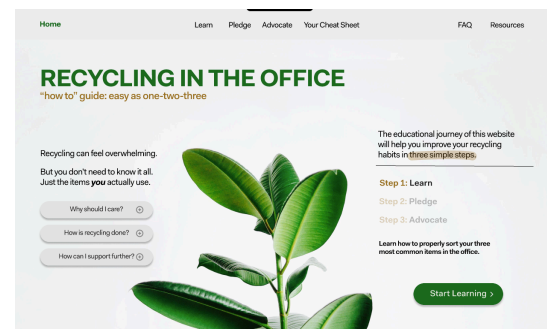
User experience choice #4 (based on feedback from target audience)

The initial prototype had the educational journey set up in a rigid step-by-step way and did not allow jumping between steps of the website to explore. During **user testing**, participants sometimes felt “trapped” and wanted to understand the full scope of the website first or go back to previous steps.

For this reason, the final version includes various points for users to move between pages.

Actually, the first landing page includes *three* different ways to get to Learn: through header menu, “Step 1” on the right and “Start Learning” action button.

The pages are also a lot more interconnected. For example, from “Your Cheat Sheet” tab they have a quick button to land on “Learn”. And if they land on “Advocate” before completing previous steps, there is a quick button to get to “Pledge” for your badge.



Part 3:

In what ways did you make the product **accessible**? What future **accessibility** plans do you have?

- Throughout this website I have made sure that all representation of sorting is done through multiple identifiers, and include a minimum of two in each instance – color, text, symbols.
 - For example, the labels on the bins in the game include words, symbols and color-coding.
 - The right/wrong highlighting in the answers are not only conveyed through color (especially because green and red is not an accessible combination) but also through symbols (checkmarks and crosses).
- I've also implemented "expand" buttons in "Learn - General Items" section, since the boxes has a lot of text with small font, which might not be readable for some.
- I have used high-contrast colors and stayed consistent with font sizes for headers.
- The General Items section also includes information in both text and image way to allow users to consume information in different ways and be more accessible.

In the future, I would definitely want to make the website adaptable to different scaling and font/ image sizes, and make sure to add voice over to pages and navigation through keyboard.

Experience reflection

What are your **major takeaways** from designing your product? What would you do **differently** if given the opportunity?

One of my major takeaways was to **always keep testing** and not get too stuck on one version of the prototype. All sessions of focus groups and individual user testing gave me some new insights or ideas that I haven't thought of or heard before. I truly realized the power of testing (and testing on different audiences!) to get the broadest set of opinions I can get, and then implement the designs based on cumulative data. So, if I were to do things differently, I'd include at least a couple more iterations of user testing after this stage (and actually would't polish the prototype as much, but start with wireframes for quicker iterations).

My other major takeaway from focus groups and user testing was that people have limited amount of effort they're willing to put into learning, especially if based on intrinsic motivation only. That's why I've tried to empathize with the user (that recycling is indeed complicated and can understandably feel overwhelming) and chunk the learning material to small pieces to allow self-paced learning. For future iterations, I would probably invest more time in other learning experiences: more gamification options or other supporting mediums to make it more engaging – for example I can see how a supplementary app would be helpful here.