



**Footprint Carbon Calculator Game
Interaction Design Documentation
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Pen Design

Foot Print Pen Features

Tip features "click-back" response system for young users.

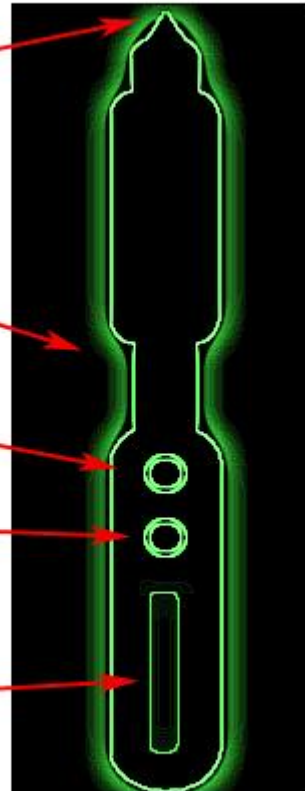
Tip is exaggerated for easy use

Ergonomic Shape for young hands.

Power On/Off Button

Internal Speaker and Mic for Audio Input/Output

LED display/light to convey status messages, reminders, and educational material



Carbon Calculator Design

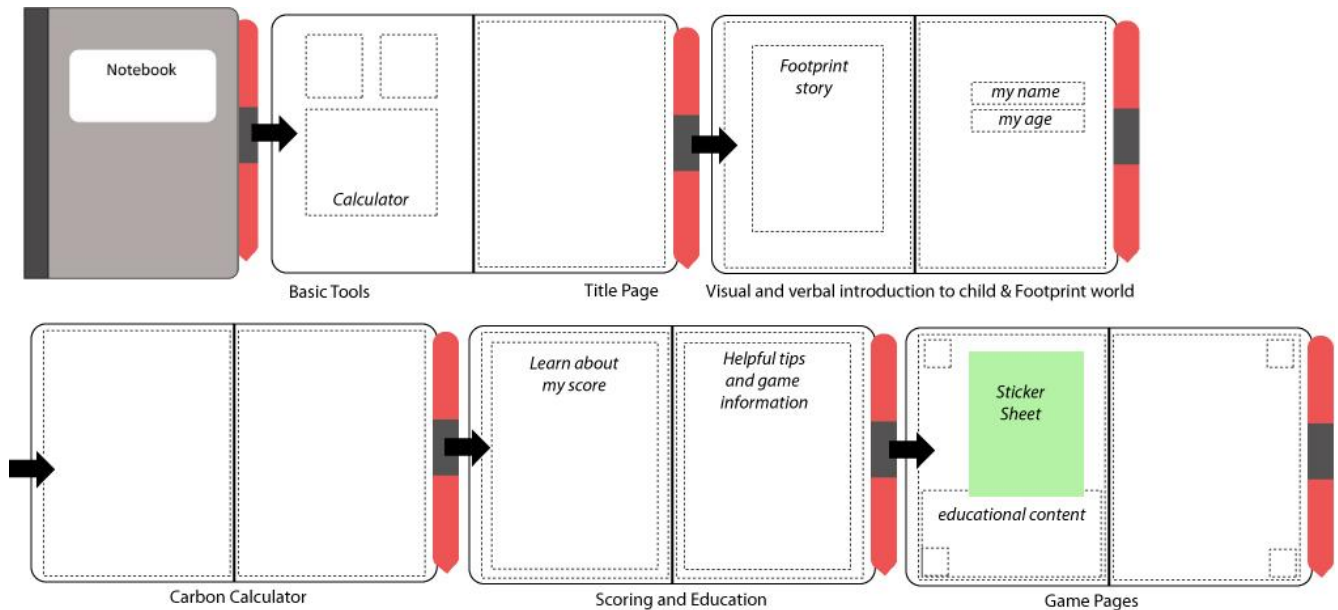
Children's smart pen, programmed for Footprint notebook.

Footprint Notebook

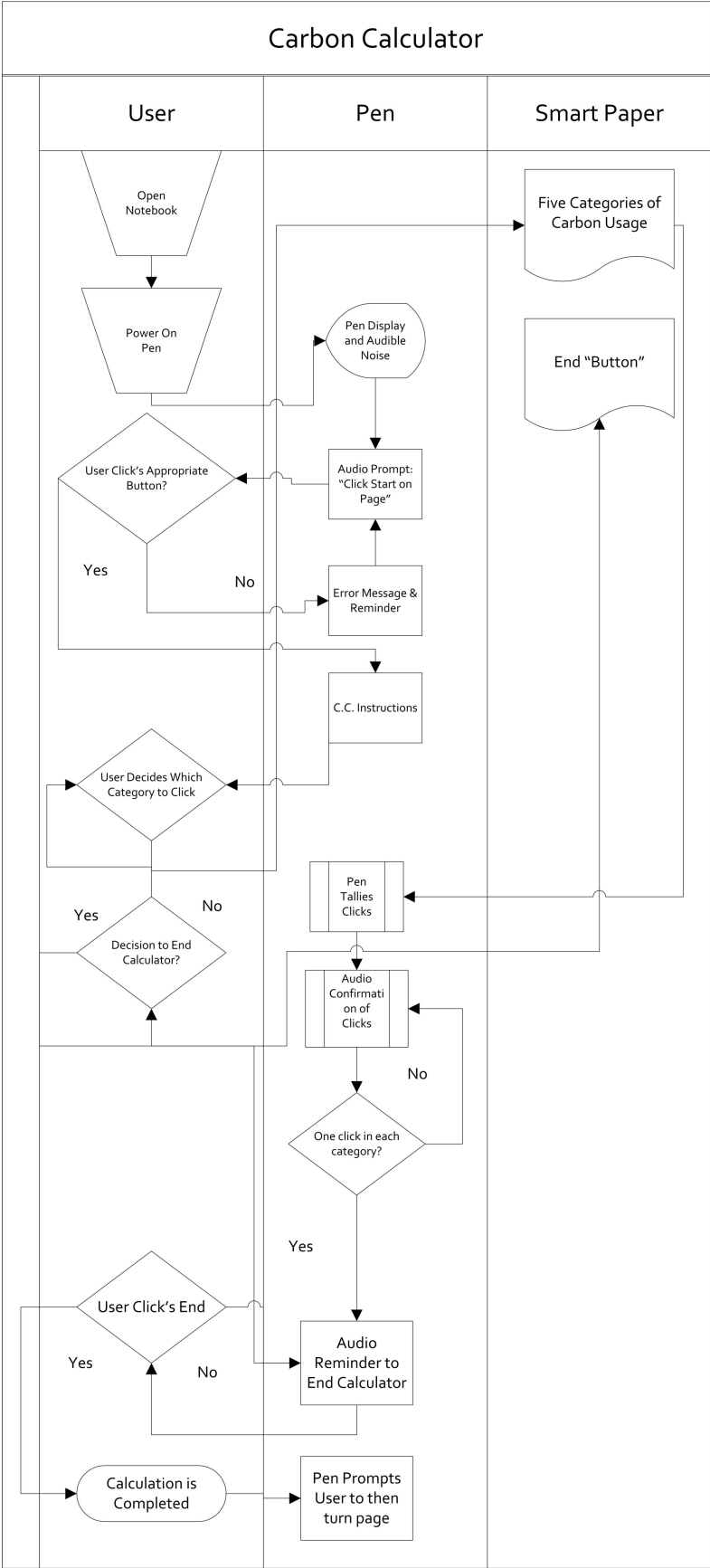
- durable (reusable) cover with holder for smart pen
- inside cover with basic tools (exp, calculator) using Footprint design

Theme

- introduction pages
- visual and written material about 'Globber' world
- space to enter information about self (name, initial CC info)
- narrative instructions to CC and following games
- Carbon calculator (two page spread)
- Carbon Footprint score and education pages (two page spread)
- Game sticker inserts and pages
- Blank pages for drawing and writing (with Footprint design theme)



Work Flow



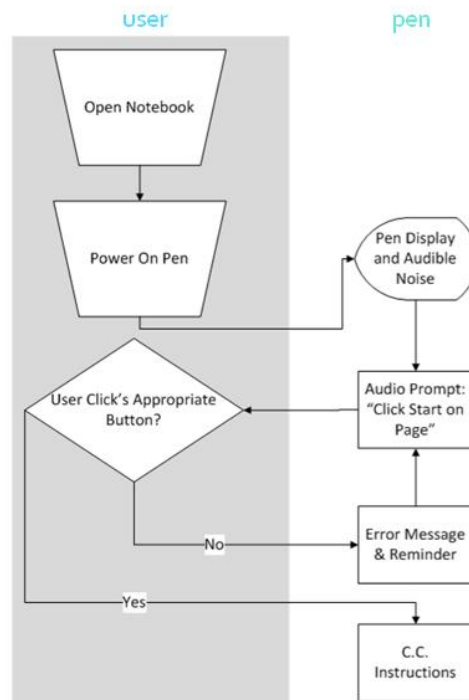
Use Case 1: Getting the game started

Actors: Child (Benny), pen, notebook

Purpose: Benny wants to play some games while waiting for his parents in a waiting room.

Initial Condition: Benny opens his notebook and looks around at different game options.

Terminal Condition: Benny hits start on the Carbon Calculator.



Primary Steps:

- Benny turns on his smart pen.
- Smart pen start-up song play.
- Smart pen LED display lights up.
- Smart pen LED display blinks text "Let's Play!"
- Smart pen audio output "Hey Benny, what did you do today? Click start and let's play!"
- Benny turns to page one of carbon calculator in notebook.
- Benny clicks start with the smart pen.
- Smart pen audio output "Last time you scored 'blue!' Click everything you did today, as many times as you did it!"

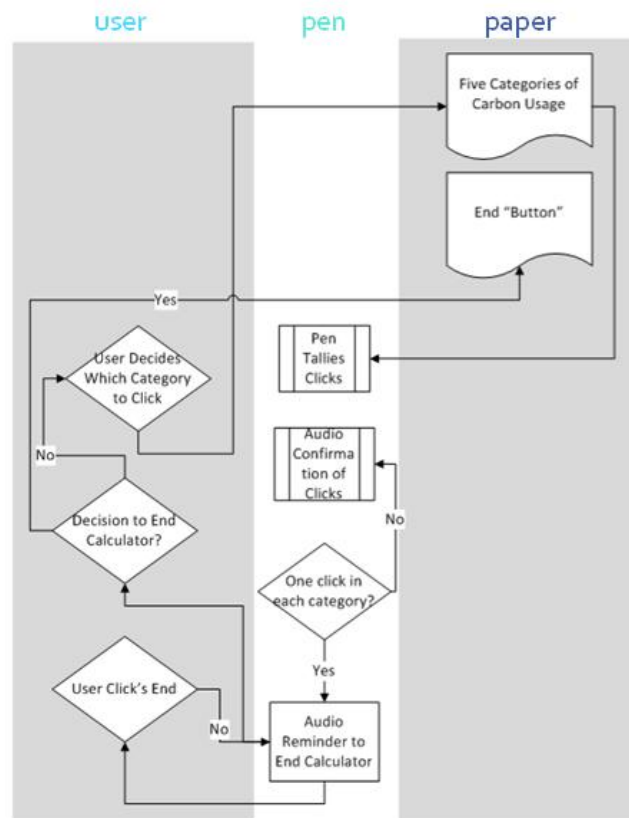
Use Case 2: Using Carbon Calculator

Actors: Child (Benny), pen, notebook

Purpose: Benny enters what he did during the day to learn his carbon score and activate games.

Initial Condition: Benny clicks an icon located on the Carbon Calculator.

Terminal Condition: Benny clicks finish on the Carbon Calculator.



Primary Steps:

- Smart pen notes date.
- Smart pen notes time of day.
- Benny recalls day and determines what to click.
- Benny clicks the bicycle icon in the notebook.
- Smart pen audio output clicking noise related to icon [bicycle] "ding ding"
- Smart pen records one bicycle ride.
- Smart pen notes one click in Transportation category.
- Smart pen notes time elapsed from click.
- Benny recalls day and determines what to click.
- [repeat previous steps until at least one click in each category]
- Smart pen notes objects chosen from each category.
- Smart pen notes time elapsed from click.
- Benny recalls day and determines what to click.
- Smart pen audio prompt "Did you do anything else today?"
- Smart pen notes time elapsed from audio prompt.
- Benny recalls day and determines what to click.
- Benny clicks the 'ate vegetables' icon in the notebook.
- Smart pen audio output clicking noise related to icon [vegetable] "crunch"
- Smart pen audio output Finish Calculator reminder "Anything else?"
- Smart pen notes time elapsed from audio prompt.

- Smart pen audio output Finish Calculator reminder "Click finish and let's play!"
- Benny determines what to click.
- Benny clicks Finish.

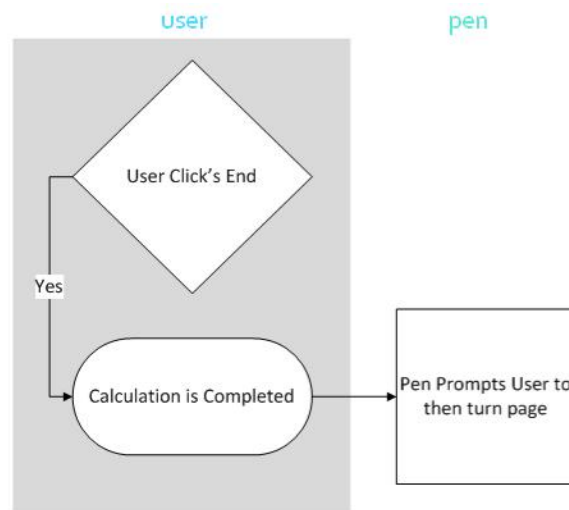
Use Case 3: Getting Carbon Score

Actors: Child (Benny), pen, notebook

Purpose: Smart Pen outputs Benny's footprint score and prompts game start.

Initial Condition: Benny clicks finish on the Carbon Calculator.

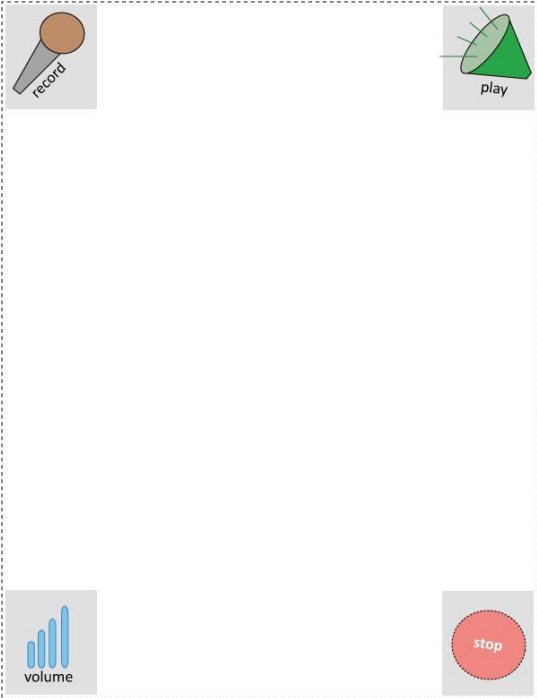
Terminal Condition: Benny turns page to start games.



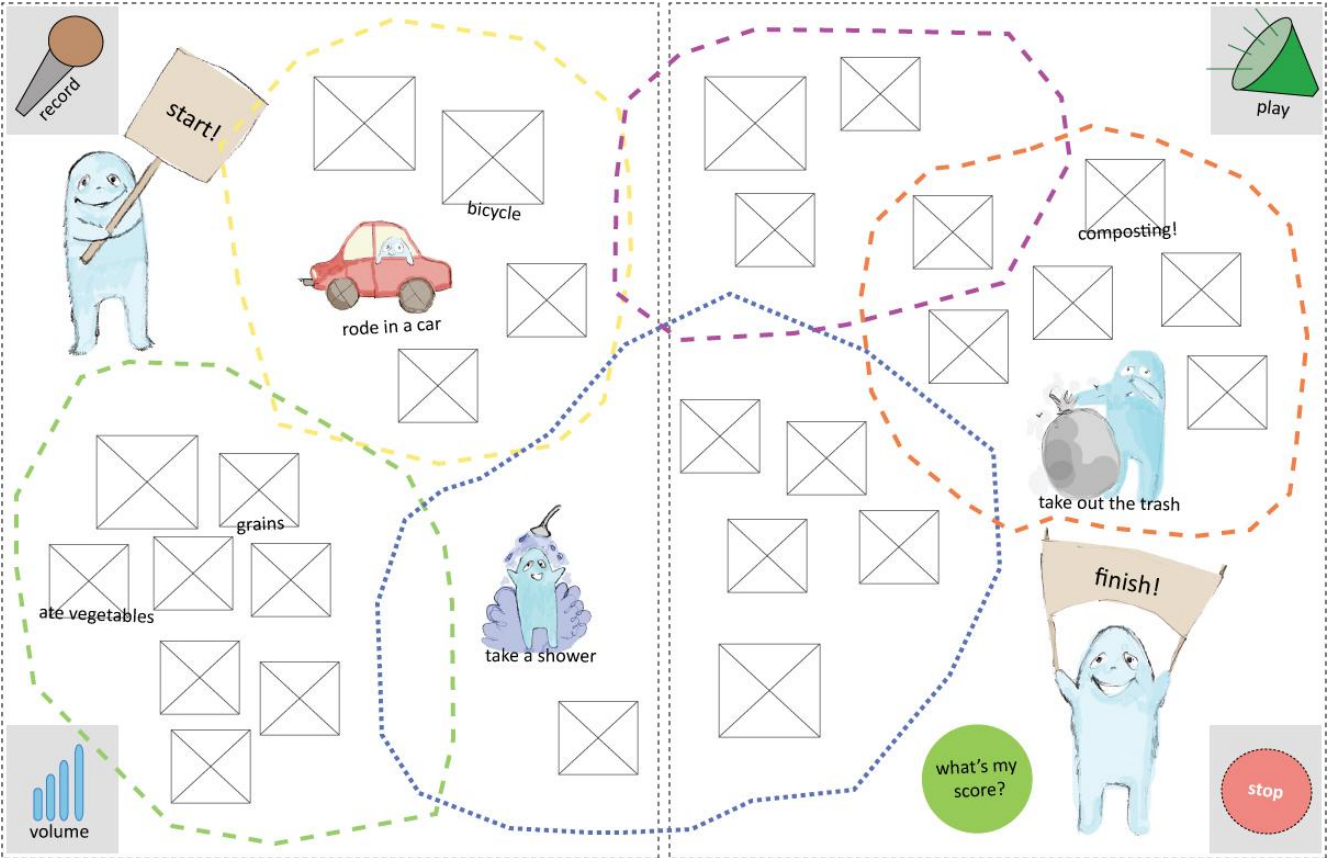
Primary Steps:

- Benny clicks finish on the Carbon Calculator.
- Smart pen calculates score.
- Smart pen finds last score.
- Smart pen audio output "Great job Benny! Turn the page for your score and games!"

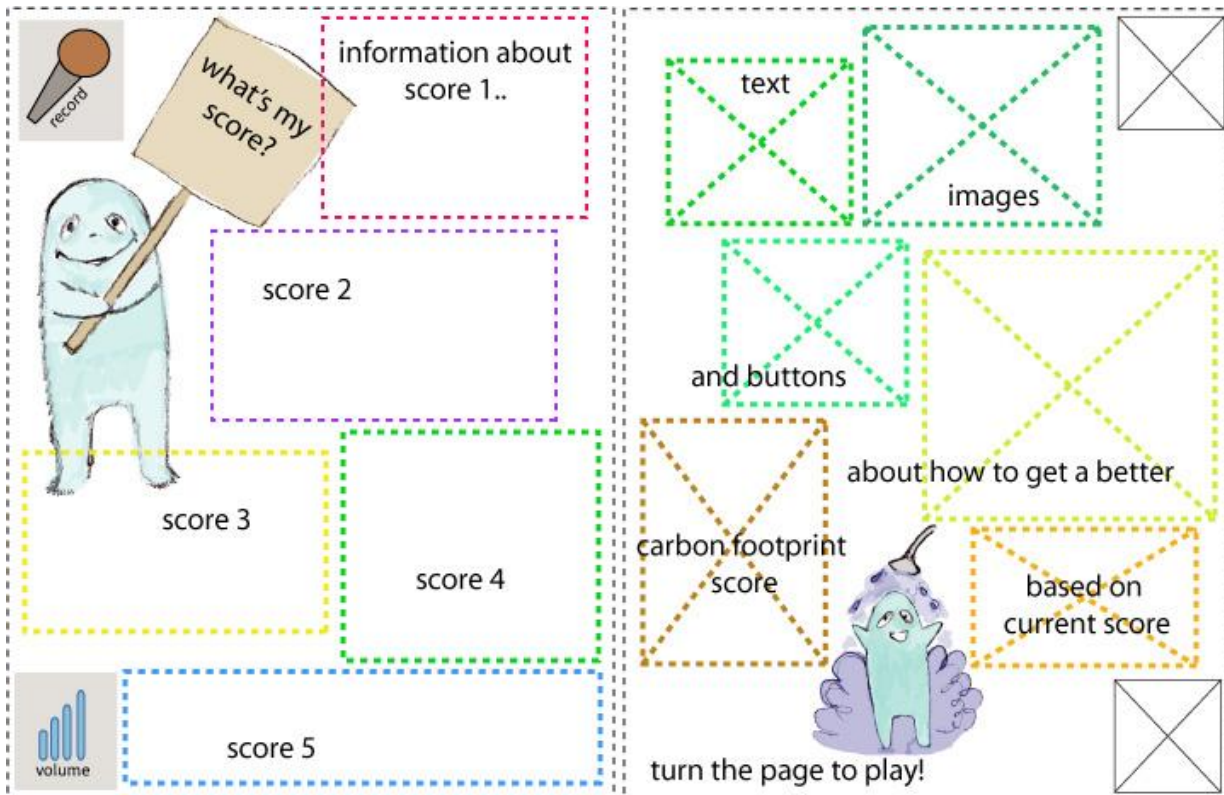
Wireframes



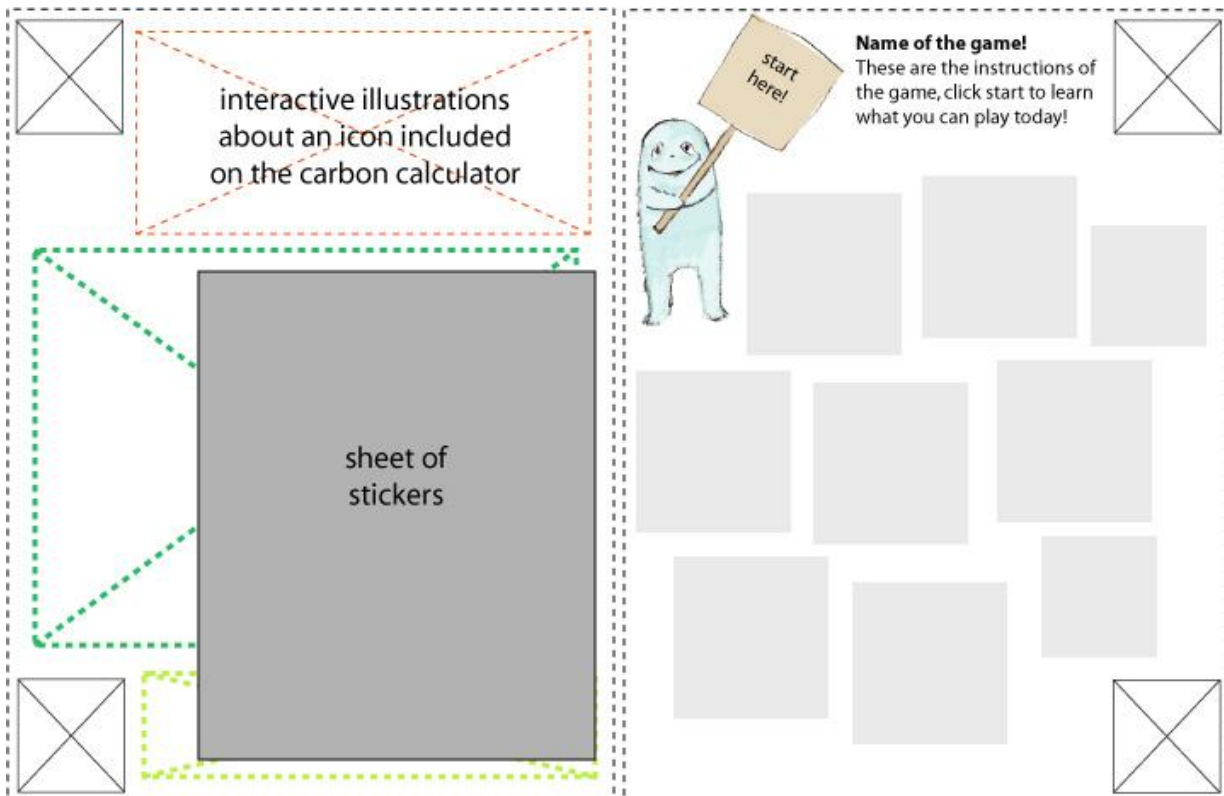
Basic Page



Carbon Calculator



Learn Score/Carbon Footprint Education



Game Pages