

Visual Instructions

Design Research 2017

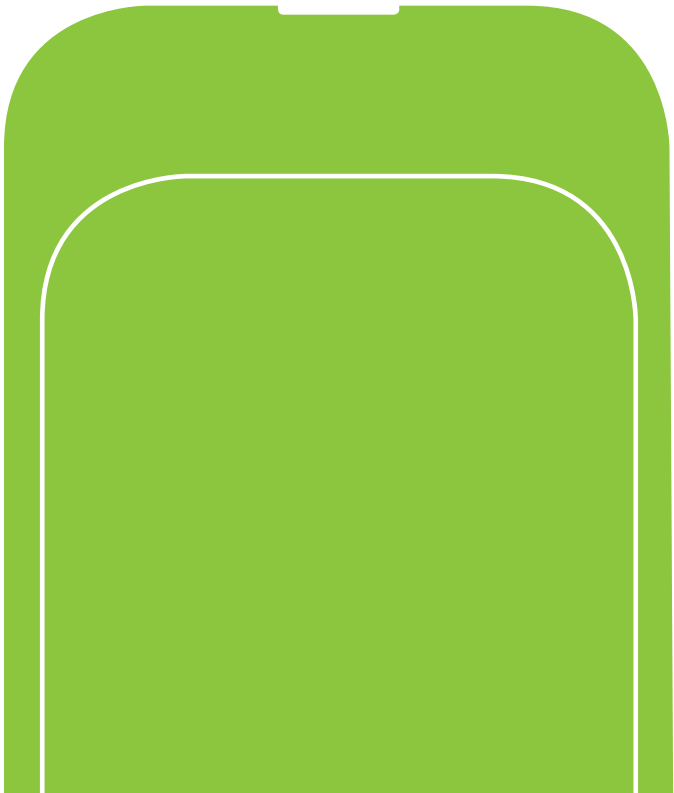


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MassArt 2017

Design Research: Visual Instructions

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The typeface that is used in this book is

Mr Eaves Mod OT.

Project Background

This project was about researching sounds and designing with clarity for a single user mode and multiple users. By observing our user's reactions and gaining feedback, we were able to make changes to our designs and communications while learning how to document types of research and stages.



Initial Research

We first started researching by experimenting and documenting the sounds of different objects. By testing different materials and methods of making sound, we were able to find what was pleasant to play and what actions were enjoyable to perform.



Challenges

- Hard to control some sounds/consistency
- Not enough variation in loudness/softness
- Finding an interesting rhythm/beat
- Creating a variety of tones with a single object
- Moving around the instrument

Enjoyable Sounds

- Metal clanging
- Sweeping
- Tapping
- Scratching
- Pen running over vent
- Plastic case of pencils
- Zipper



Enjoyable Body Movements

- Sweeping
- Banging
- Hitting
- Tapping
- Scratching
- Twisting
- Shaking
- Sliding

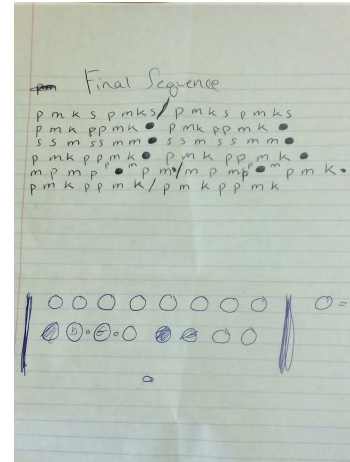
First Version



We went with the packaged music in a kit idea. We tested the enjoyability and loudness of different materials with the aim of having enough variation for our instrument. The objects on the left are finger tappers (a pipe joint, the metal piece from a paintbrush, and a key). And yes, we taped Nerds into the box as a shaker.



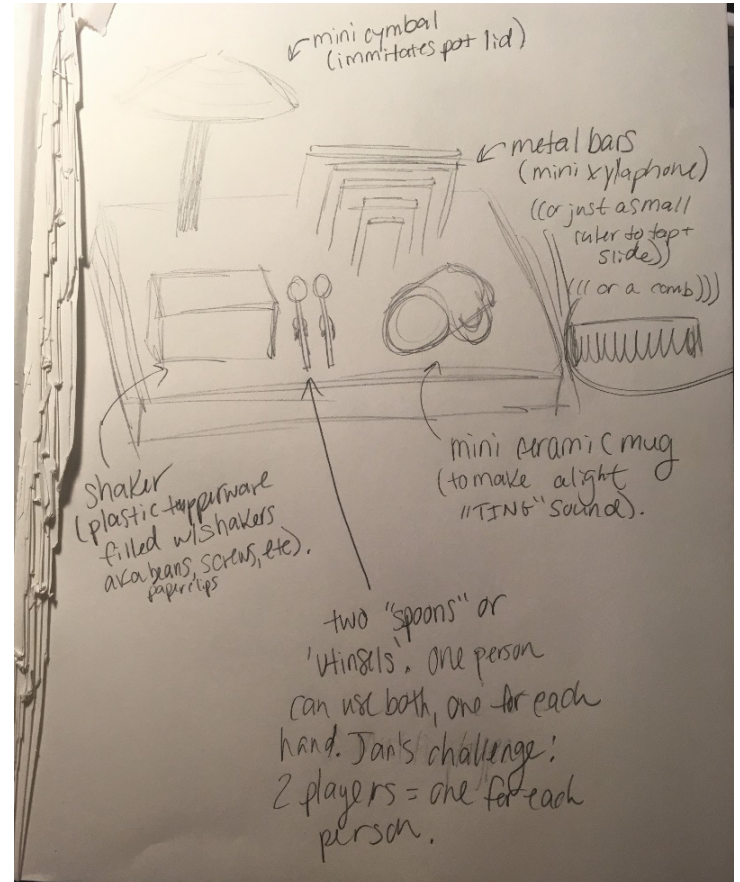
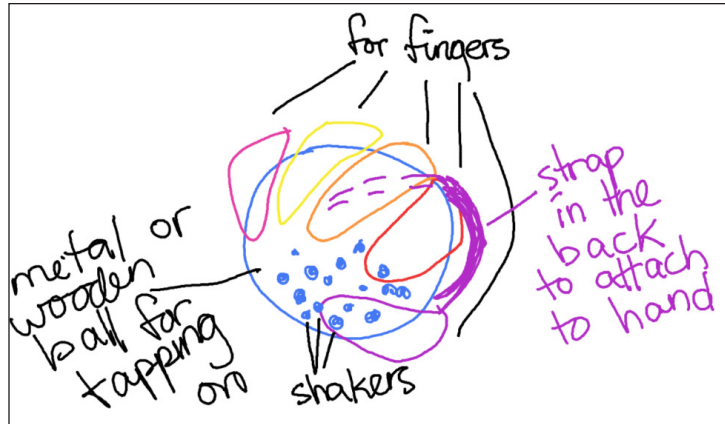
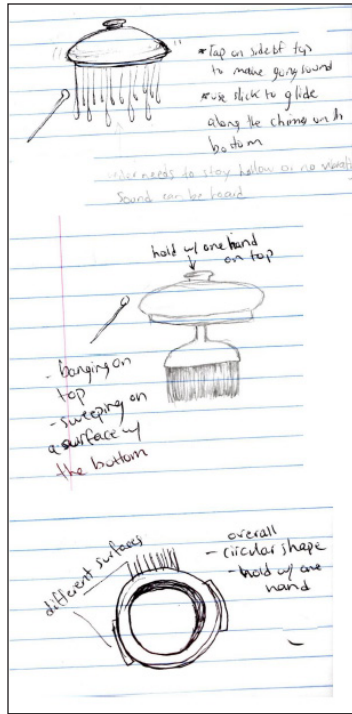
Our initial sound sequence consisted of four different sounds/actions: shaking, scraping, and two tapping



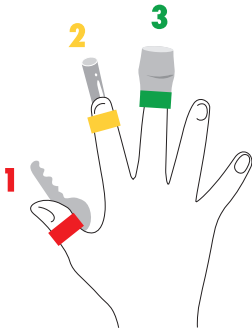
These are the quick shorthand instructions we made to create our initial 60 second sound sequence.

Initial Thoughts for Prototype

- Combining multiple surfaces
- Tapping on different parts
- Hand held objects
- Mini band set
- Wearable instruments
- Deconstructed package




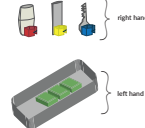
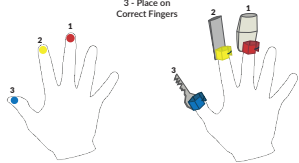
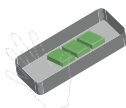
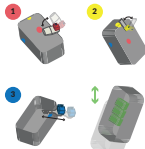
Place the fun finger tappers on your fingers:



With your other hand, hold the box as you feel most comfortable.

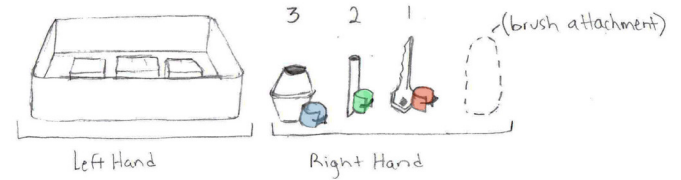
We needed to show people how to operate the instrument so we drafted up some possible instructions to inform the user how to hold the box, which pieces go on which finger as well as how to perform the different actions each would require. The perspectives of the box and also the drawing style of the instructions were successful so we chose to combine the two.

Playing [Instrument Name]

- 1 - Open the Box
 
- 2 - Examine Contents
 
- 3 - Place on Correct Fingers
 
- 4 - Hold Box with Left Hand
 
- 5 - Practice the Sounds
 

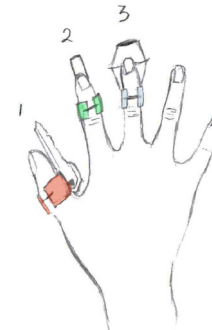
Learning to Play [instrument name]

Object Inventory



How to Hold

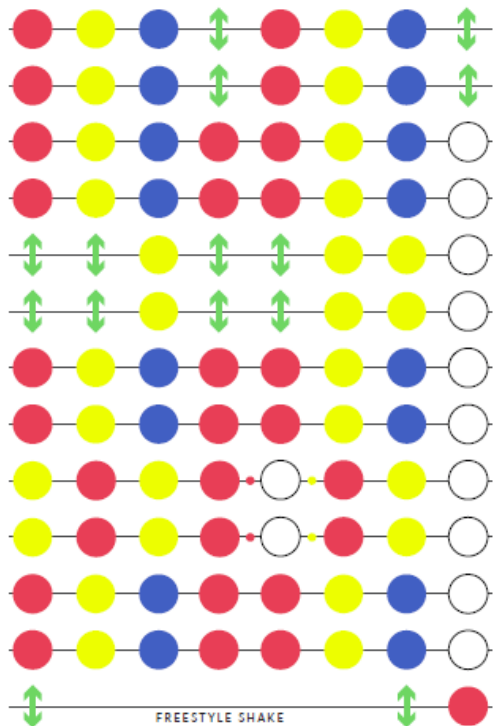
1 Using your RIGHT hand, place the finger attachments on the fingers as indicated below.



Let's Play [Instrument Name]!

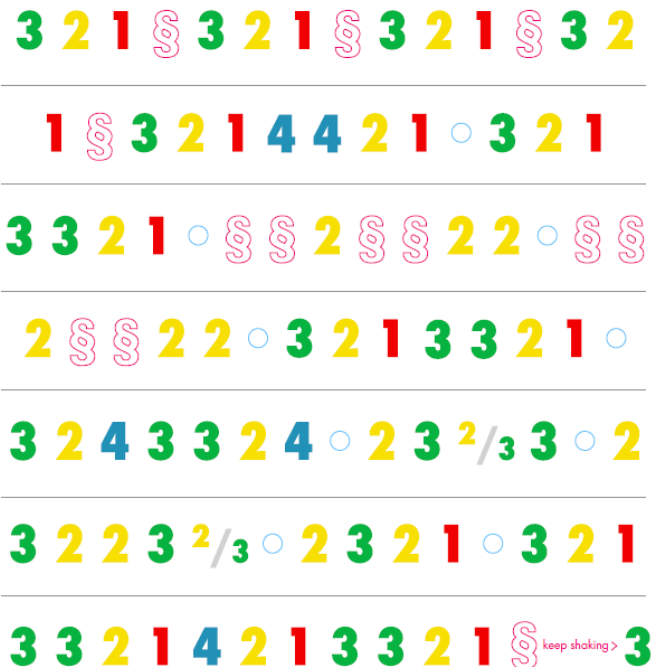
Play at your own pace to start with. Each circle is a beat.
Use the key to learn more.

- 1 Tap Finger 1 ↕ Shake Left Hand/Box
- 2 Tap Finger 2 Don't Play
- 3 Glide Finger 3 • Play Quickly Between
- Normal Beats



Fun Fingers No. 1

- § : shake
- : pause
- / : 2 notes per beat



We started out by forming sketches for the music instructions, trying out different symbols, numbers and colors. From here, we wanted to make it simpler and easier for the player to understand.

Let's Play
Play at your own pace but most importantly have fun!

↑ ↓ : shake
○ : pause
smaller numbers are half notes

3 2 1 ↑ ↓ 3 2 1 ↑ ↓
3 2 1 ↑ ↓ 3 2 1 ↑ ↓
3 2 1 3 3 2 1 ○
3 2 1 3 3 2 1 ○
↑ ↓ 2 ↑ ↓ 2 2 ○
↑ ↓ 2 ↑ ↓ 2 2 ○
3 2 1 3 3 2 1 ○
3 2 1 3 3 2 1 ○
2 3 2 3 3-2 3 2 ○
2 3 2 3 3-2 3 2 ○
3 2 1 3 3 2 1 ○
3 2 1 3 3 2 1 ○
↑ ↓ freestyle shaking ↑ ↓ 3

The number of colors were reduced and numbers were used to correspond with each finger.

Let's Play
Play at your own pace but most importantly have fun!

↑ ↓ : shake
○ : pause
smaller numbers are half notes

The tempo of the music was left to the player to decide so they would not be pressured by having to keep a beat while figuring out how to play.

3 2 1 3 3 2 1 ○
3 2 1 3 3 2 1 ○
2 3 2 3 3-2 3 2 ○
2 3 2 3 3-2 3 2 ○
3 2 1 3 3 2 1 ○
3 2 1 3 3 2 1 ○
↑ ↓ freestyle shaking ↑ ↓ 3

The smaller numbers with a pause inbetween were to create variation for the tempo. We felt that the freestyle shake (on the bottom) would be fun for the user so we kept this feature.

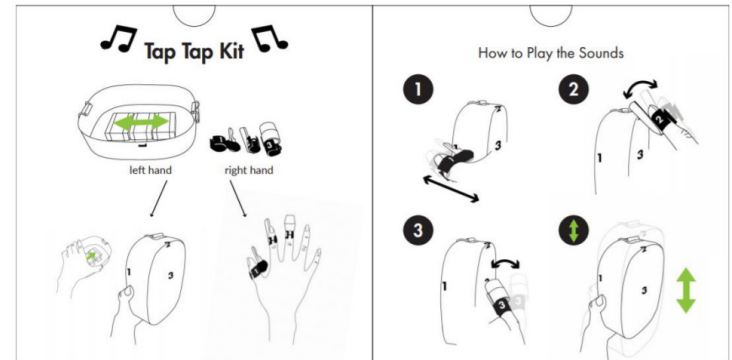


User Test: Connor

- Very eager & excited to open box and to play
- Failed to see the back side of envelope for further instructions
- Unaware of and ignored instructions on how to wear finger attachments
- Did not play finger 1 as intended
- Keeps tempo well on all but the 1/8 notes
- Really enjoyed the freestyle

Comments

- Numbers are clear and intuitive
- Overall experience was pleasant
- Impressed with the variety of sounds produced
- Really appreciates the simplicity of the instructions
- Likes the compactness
- Skipped over the 1/8 notes: was confused on how long to pause



We initially put the instructions on the envelope. The problems with this was that people would sometimes only see one side, and was visually busy with too many perspectives. The arrows pointing both ways were also confusing for the actions.

1

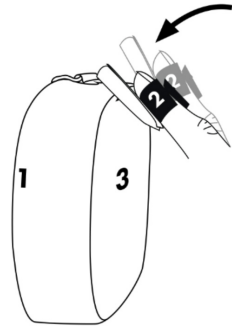
2

3

(2nd version of stickers on box)

Design Revisions

The format of the instructions were changed to the back of the music instructions where there was more room and the folds helped separate and clearly show each step.



Revised drawing with arrow only pointing in one direction. We also closed the shape of the box to make the objects more defined because the user was confused.

HOW TO PLAY

Right Hand

Left Hand

HOW TO HOLD

- 1 Shake
- 2 Glide
- 3 Tap
- 3 Tap



Envelope for holding instructions when folded.

Let's Play

Play at your own pace but most importantly have fun!

↓ shake
○ pause
smaller numbers are half notes

3	2	1	↓	3	2	1	↓
3	2	1	↓	3	2	1	↓
3	2	1	3	3	2	1	○
3	2	1	3	3	2	1	○
↓	↓	2	↓	↓	2	2	○
↓	↓	2	↓	↓	2	2	○
3	2	1	3	3	2	1	○
3	2	1	3	3	2	1	○
2	3	2	3	2	3	2	○
2	3	2	3	2	3	2	○
3	2	1	3	3	2	1	○
3	2	1	3	3	2	1	○
↓	↓	twenty	shaking	↓	↓	3	

→

Let's Play

Use the tempo of "Shyler" Alibi by the Bee Gees to play on beat.
Pro Tip: Tap your foot to the beat!

↓ shake
○ pause

3	2	1	↓	3	2	1	↓
3	2	1	↓	3	2	1	↓
3	2	1	3	3	2	1	○
3	2	1	3	3	2	1	○
↓	↓	2	↓	↓	2	2	○
↓	↓	2	↓	↓	2	2	○
2	○	2	○	3	3	3	1
2	3	2	○	3	1	3	1
1	2	3	2	↓	2	3	2
3	○	↓	3	1	↓	○	↓
1	2	2	2	1	2	2	2
2	3	↓	3	○	↓	3	2
↓	↓	twenty	shaking	↓	↓	3	

The notes were edited to have a better playing flow. The tempo had a trial solution and the eight notes were taken out.

Let's Play

Use the tempo of "Stayin' Alive" by the Bee Gees to stay on beat.
Pro Tip: Tap your foot to the beat

↑ ↓ : shake
○ : pause

3 2 1 ↑ ↓ **3 2 1** ↑ ↓

3 2 1 ↑ ↓ **3 2 1** ↑ ↓

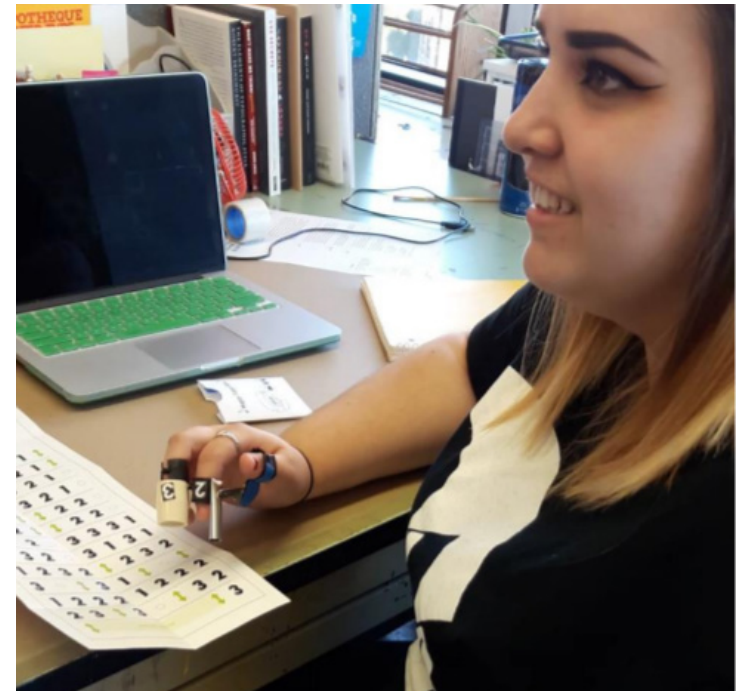
The biggest challenge was providing a tempo for the player since we wanted to stick to print. We added a familiar song as a reference.

User Test: Alex

- fingers 1 and 2 are worn and played correctly
- hits attachments on correct spots on the box
- has no difficulty with the tempo
- enjoys the freestyle shake

Comments

- not too difficult to play/ understand
- very straightforward
- "makes a good variety of sounds"
- suggests that the numbers on the box could be green vs black
- suggests that the arrow on the finger 1 diagram could be moved directly above the thumb for clarity
- did not see the instructions at the top of the music sheet
- loved the instrument

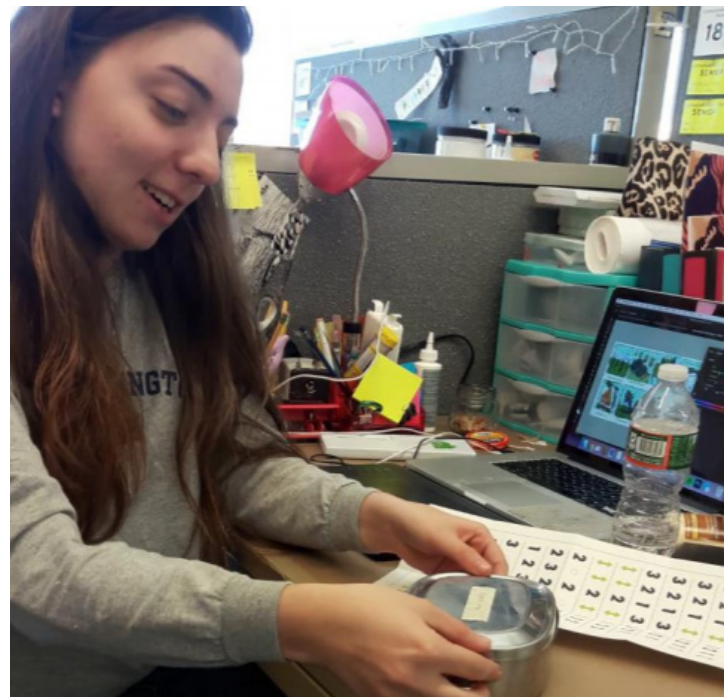


User Test: Matt

- Initially confused how to read instructions at first but figures it out after opening the whole sheet
- Is visibly enjoying the process of figuring out the sheet
- Wears fingers 2 and 3 on the wrong fingers
- Though wearing attachments wrong, he plays the instrument correctly and hits the right spots
- “cool I like this”
- Occasionally turns sheet over while playing to refer to finger movements
- Has no difficulty with tempo
- Enjoys the freestyle shake

Comments

- Had a fun experience, enjoyed the process of figuring it out
- Initially not sure how to read the instructions and thought maybe it was a booklet
- Says instructions are pretty self-explanatory
- He thinks that maybe the fact that he plays guitar with certain fingers may have influenced how he wore the finger attachments
- Thinks that “glide” was initially misleading and ambiguous term for finger 1, suggests “scrape”
- Admits he did not read the instructions at top of music sheet



User Test: Melanie

- Tries to match fingers with the diagram
- Closes the box to play, expresses confusion
- Initially tries to play the whole instrument with one hand but figures it out while practicing
- Shakes box multiple times
- Taps the key as opposed to gliding
- Hits with finger tappers on the correct places
- Plays at an inconsistent tempo
- Enjoys the freestyle shake

Comments

- Initially confused about the finger 1 placement because she could not see the number 1 on the box (because the lid was on)
- admits that she did not read the tempo instructions
- Thinks that saying “lid off” on the instruction could be clearer
- When asked about the term “glide” being replaced with “scrape”



User Test: Kenny

- Opens instructions all the way but misses the “how to wear” section
- Figures out how to wear by referring to the “how to play” section
- Expressed confusion on whether or not to keep the lid on
- Completely ignores the numbers on the box
- Shakes the box multiple times
- Recites notes to himself, playing a slow but consistent tempo

Comments

- Playing was fun
- Did not see the smaller hand part for the left hand
- Did not read instructions at top of music sheet
- Did not know the song of Staying Alive until the melody was shown
- Did not know where to read from the instructions first
- Could not see the number 1 on finger 1 drawing or the instrument itself

General Observations

- Users sometimes skip instructions
- Users have fun playing and reading
- Sometimes finger tappers are put on wrong
- Finger 1 wording for action is confusing

Let's Play

Use the tempo of "Stayin' Alive" by the Bee Gees to stay on beat.
Pro Tip: Tap your foot to the beat.

↓ : shake
○ : pause

3 2 1 ↓ 3 2 1 ↓
 3 2 1 ↓ 3 2 1 ↓
 3 2 1 3 3 2 1 ○
 3 2 1 3 3 2 1 ○
 ↓ ↓ 2 ↓ ↓ 2 2 ○
 ↓ ↓ 2 ↓ ↓ 2 2 ○
 2 ○ 2 ○ 3 3 3 1
 2 3 2 ○ 3 1 3 1
 1 2 3 2 ↓ 2 3 2
 3 ○ ↓ 3 1 ↓ ○ ↓
 1 2 2 2 1 2 2 2
 2 3 ↓ 3 ○ ↓ 3 2
 ↓ *freestyle shaking* ↓ 3

Fun Finger Kit

In Class User Test

- Was our only user that didn't understand the numbered notes
- Enjoyed the kit aspect
- Confused about the scraping
- Finger tappers were a bit tight for him
- Found the song reference confusing

1

2

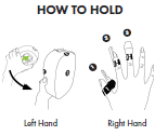
3

(2nd version of stickers on box)




2 Player Instructions

HOW TO HOLD




Left Hand Right Hand


1 Shake once




2 Scrape edge towards you



3 Top tip edge



4 Top middle



Let's Play

Play each note on the beat.

↑ : shake
○ : pause

■ Second player: play in between beats

3 2 1 ↑ 3 2 1 ↑
 3 2 1 ↑ 3 2 1 ↑
 3 2 1 3 3 2 1 ○
 3 2 1 3 3 2 1 ○
 ↑ ↑ 2 ↑ ↓ 2 2 ○
 ↑ ↑ 2 ↑ ↓ 2 2 ○
 2 ○ 2 ○ 3 3 3 1
 2 3 2 ○ 3 1 3 1
 1 2 3 2 ↓ 2 3 2
 3 ○ ↓ 3 1 ↑ ○ ↓
 1 2 2 2 1 2 2 2
 2 3 ↑ 3 ○ ↓ 3 2
 ↑ freestyle shaking ↓ 3

We added the instructions for Player 2 and kept everything color coded purple for them. Keeping everything grouped for the two players helped to identify the steps.

We chose to add a metronome to help the user stay on beat. By testing and playing both players role's together, we were able to design a harmonious and fun collaboration between both of the player's roles.

Single Player with 2 Player Instructions

- Stayed on beat really well with metronome
- Said it helped her concentrate
- Confused at the 2 Player instructions because she was only one person
- Had a lot of fun
- Enjoyed the instructions
- Didn't do scrape action correctly





This team performed perfectly and had lots of fun. They were concentrated and played harmoniously while staying on the metronome's beat.

Player 1 helped Player 2 who was having a difficult time understanding, but she didn't read the instructions at all.



Let's Play

Play each note on the metronome's beat.

single player

1 : scrape edge	↑ ↓ : shake
2 : top top edge	○ : pause
3 : top middle of box	

■ : second player

3	2	1	↑ ↓	3	2	1	↑ ↓
3	2	1	↑ ↓	3	2	1	↑ ↓
3	2	1	3	3	2	1	○
3	2	1	3	3	2	1	○
↑ ↓	↑ ↓	2	↑ ↓	↑ ↓	2	2	○
↑ ↓	↑ ↓	2	↑ ↓	↑ ↓	2	2	○
2	○	2	○	3	3	3	1
2	3	2	○	3	1	3	1
1	2	3	2	1	2	3	2
1	○	↑ ↓	2	3	○	↑ ↓	↑ ↓
2	3	3	3	2	3	3	3
2	3	↑ ↓	3	↑ ↓	3	2	○
↑ ↓	foosyle shaking					↑ ↓	3

Design Tevisions


A summary of the actions for each finger/number was written in the front so that players don't have to keep flipping back and forth. The purple square symbols for Player 2 were also made less obtrusive.




Player 1 had trouble remembering the actions that matched the numbers. This threw Player 2 off track and it was difficult to play. Player 1 said that the metronome was really helpful but would prefer something like symbols instead of numbers so she didn't wouldn't forget what action she should do. Player 2 wished he had more actions to do because he only had one action.

PLAYER 1 MODE


Right Hand




Left Hand




↕ shake




~~~~ : scrape key



☐ : tap top of box

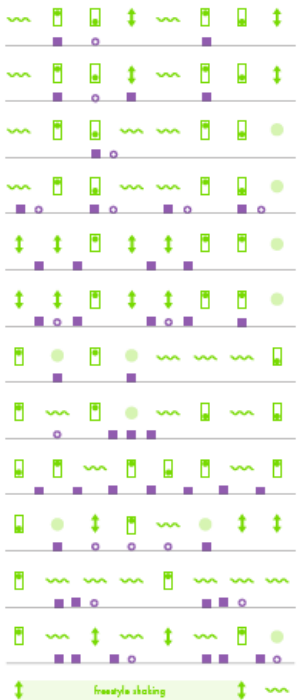


☐ : tap middle of box



# Let's Play


Player 1: Play each note on the metronome's beat.  
● : pause for 1 beat




freestyle shaking

**PLAYER 2 MODE**

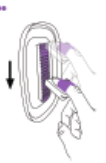
Right Hand




Left Hand



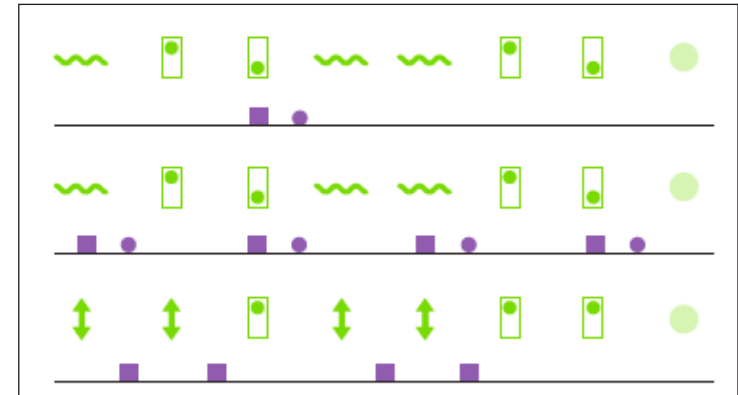
■ : scrape



○ : tap to the right

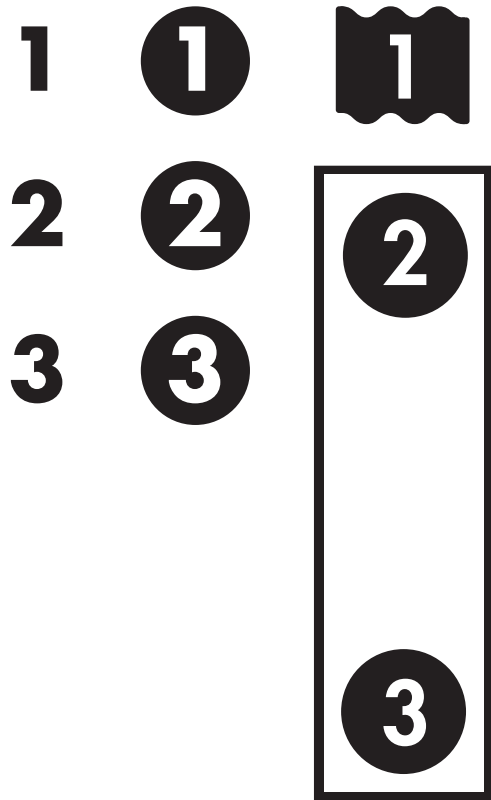


Everything was brought to one side because even though summary was written on the music instructions side, users kept flipping back and forth. Player 1 and Player 2 clearly defined. We changed the numbers to symbols that correlated more with the actions. Each instruction step (that fits within and is separated by the folds) comes with a matching symbol and action. Player 2 got another action to perform to make it more enjoyable.



Close-up view of the symbol notes.

# Sticker Revisions



Box with final sticker iteration. The colors stand out more than the previous ones who help to highlight the locations for the finger pieces to go. The shapes also help the user correlate the locations with the actions.





## What We've Learned

From the continual process of trial and error, seeing what what works, and designing based on the feedback from user testing, there is still plenty of room for growth and improvement. We've definitely learned how to document our research as well as how to best engage and draw valuable information from observing and interviewing users. We have also learned that people are very different in how they view things, this is a challenge and something to consider if it is possible to design in such a way as to communicate with utmost clarity.

**The Triple A Team**  
Amenda, Anne, Abigail