



abigail busch

Industrial design portfolio 2021

Abigail Busch

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Work Experience

Skip Hop

New York City, NY

01/20-04/20 Designer

Research, brainstorm, sketch, 3D model, prototype, and present innovative essentials for families including toys and home goods. Understand manufacturing processes and communicate with engineers overseas .

Pampered Chef

Addison, IL

05/19-08/19 Designer

Work collaboratively with the solutions innovation team to ideate, sketch, 3D model, and prototype fresh ideas and products.

Signature Hardware

Erlanger, KY

08/18-12/18 Designer

Create applicable content and visualizations representative of the SH brand for social media platforms, design email newsletters, and draw comprehensible installation instructions utilizing the Adobe Creative Suite.

Education

University of Cincinnati

DAAP

BS in Industrial Design

Deans List

Class of 2021

Accademia Italiana

Study Abroad

BS in Industrial Design

09/19-12/19

Riverside High school

Painesville, OH

Advanced Placement Scholar

Honors

Class of 2016

Skills

Digital

Adobe Creative Suite

(InDesign, Illustrator,

Photoshop, Dreamweaver)

Microsoft Office

(Word, Excel, Power Point)

Auto Desk

(Fusion 360, Sketchbook Pro)

Solidworks

Keyshot

Hand

Sketching

Rendering

Woodworking

Sewing

Oil Painting

Contents

1 Skip Hop

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2 Measure

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pg. 24

4 Veggie Pillows

pg. 42

Skip Hop

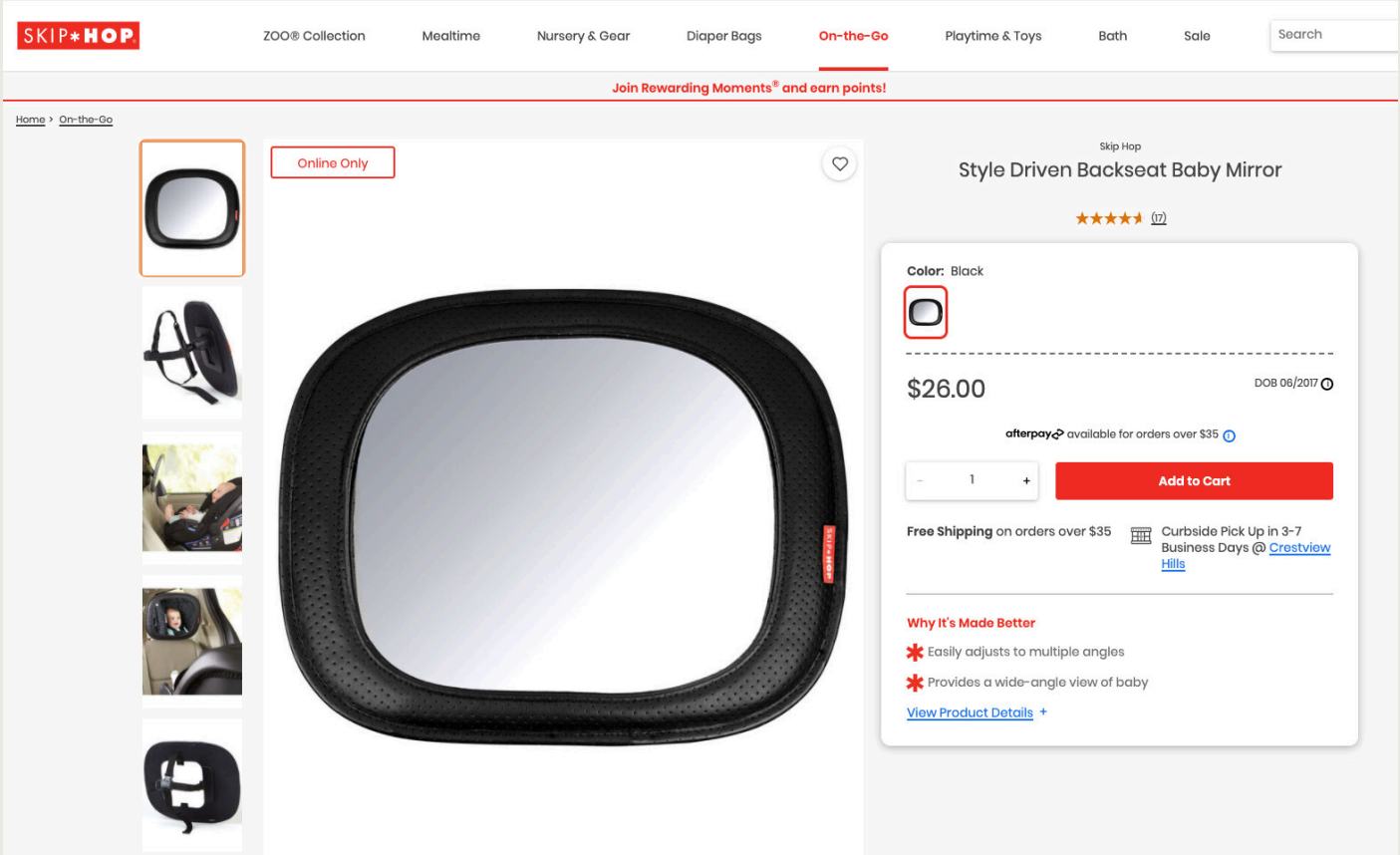
Two selected projects completed during a 4 month long internship at the beginning of 2020 at Skip Hop in NYC. Focusing on everyday necessities and toys for babies and toddlers



Backseat Baby Mirror

Create an interactive Backseat Car Baby Mirror based off current design and incorporating Skip Hop’s ‘Silver Lining’ collection

Current Model-



Silver Linings Collection Attributes

- Starry, dreamy characters including rainbow, cloud, lamb, star, and sun.
- Bright playful colors



Backseat Baby Mirror

Presented Concepts

SKIP•HOP.

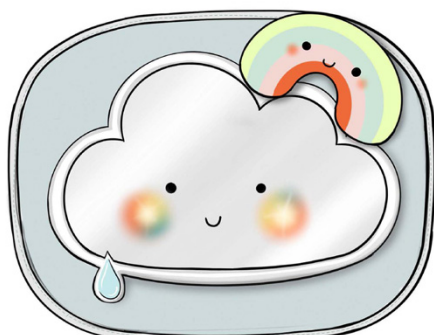


Concept 1

- Rounded form
- Twinkle lights to sooth child
- Glowing cloud effect



SKIP•HOP.



Concept 2

- Silver Linings cloud shaped mirror
- Glowing Cheek lights that shine on mirror
- Raindrop button to start different modes
- Removeable plush rainbow rattle
- Soft textured light blue fabric cover



SKIP•HOP.



Concept 3

- Rounded form
- Silver Linings cloud shaped mirror
- Glowing Cheek lights that shine on mirror
- Soft textured light blue fabric cover

SKIP•HOP.



Concept 4

- Current Backseat mirror form
- Silver Linings cloud shaped mirror
- Glowing Cheek lights that shine on mirror (different Colors)
- Soft textured fabric cover

SKIP•HOP.



Concept 5

- Current Backseat mirror form
- Twinkle lights to sooth child
- Glowing cloud effect

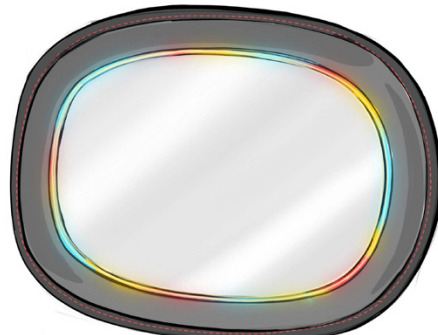
SKIP•HOP.



Concept 6

- Rounded Rectangle form
- Glowing night sky lights under mirror
- Soft textured fabric cover

SKIP•HOP.

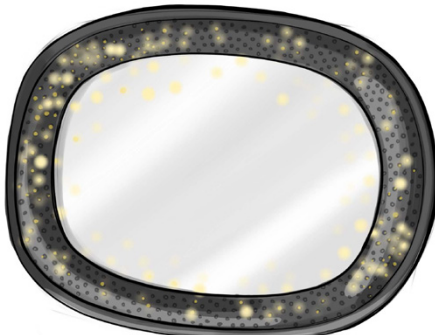


Concept 7

- Current Backseat mirror form
- LED band around mirror
- Colors transition



SKIP•HOP.

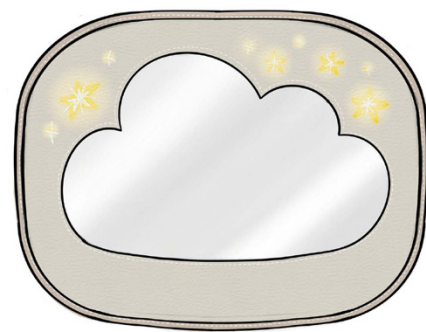


Concept 8

- Current Backseat mirror form
- Twinkle lights glow under leather and mirror



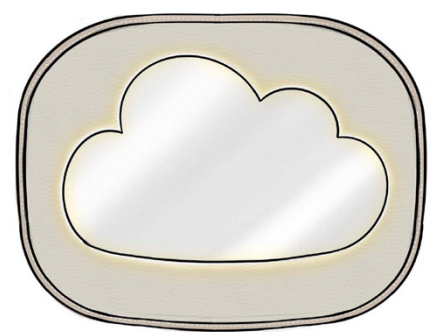
SKIP•HOP.



Concept 9

- Current Backseat mirror form
- Silver Linings cloud shaped mirror
- Starry twinkle lights above or under fabric
- Tan leather cover

SKIP•HOP.

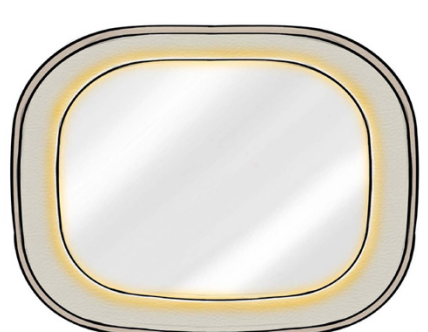


Concept 10

- Current Backseat mirror form
- Silver Linings cloud shaped mirror
- Tan leather cover
- Lights under mirror



SKIP•HOP.



Concept 11

- Current Backseat mirror form
- Tan leather cover
- Lights under mirror

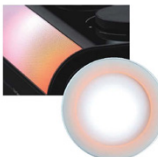


SKIP•HOP.



Concept 12

- Current Backseat mirror form
- Soft glow light around mirror under frosted glass
- Colors can change from warm to cool



Backseat Baby Mirror

Presented Remote Concepts

The included remote should let parents control the music, lights and volume from the front seat of their car.

Competitive model-



SKIP*HOP.

Remote 1

- Circular shape
- 3 different modes- Night, Day and ZZZ (just sound)
- Adjust volume with (+, --)
- Clips to car visor (like garage remote)
- Matte top glossy sides

Remote 3

- 2 different modes- Night and Day
- Adjust volume with (+, --)
- Simple circular shape
- Leather strap to match mirror



Remote 2

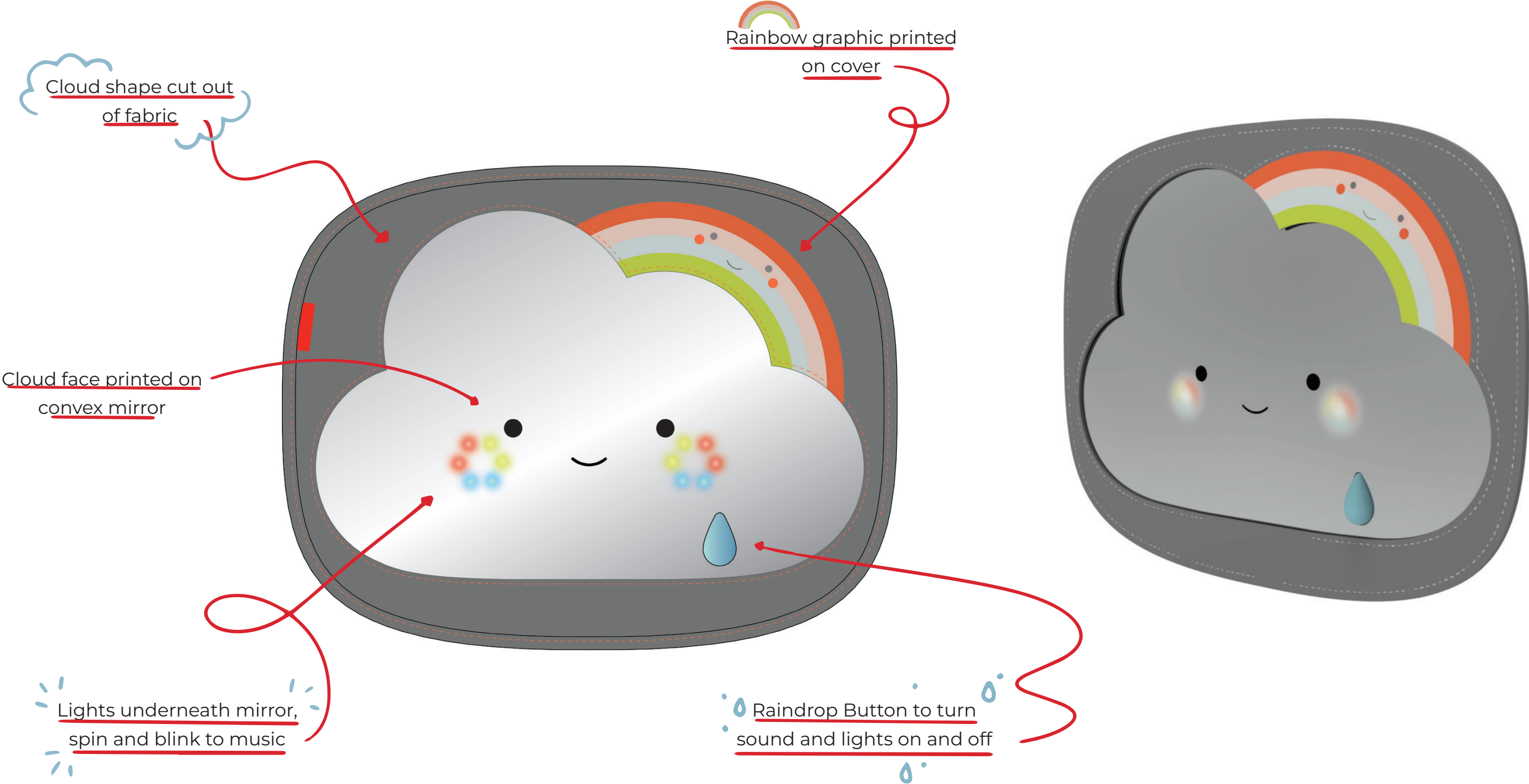
- Circular shape
- 3 different modes- Night, Day and ZZZ (just sound)
- Adjust volume with +, --
- Climbing rope strap in Silver Linings color way

Remote 4 ★

- Cloud button to turn on/off
- Raindrop buttons to adjust volume
- Clips to car visor (like garage remote)

Backseat Baby Mirror

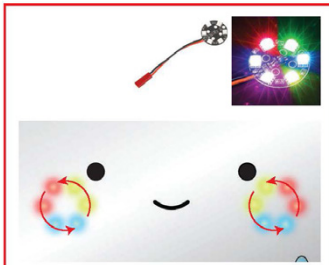
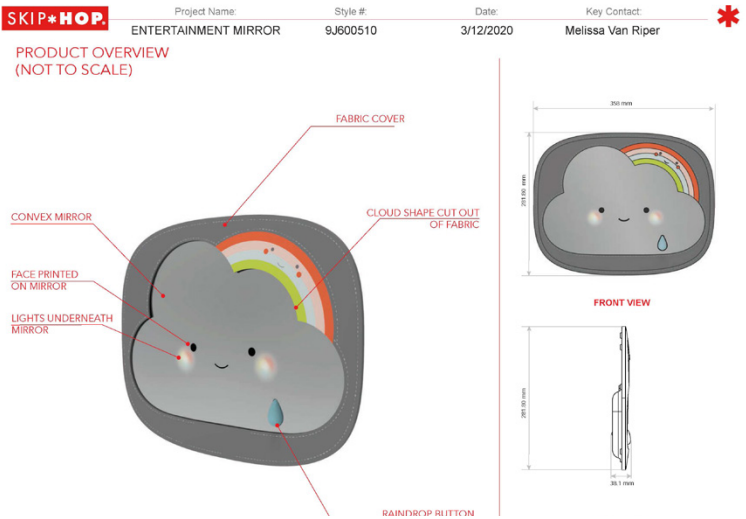
Final Mirror Concept



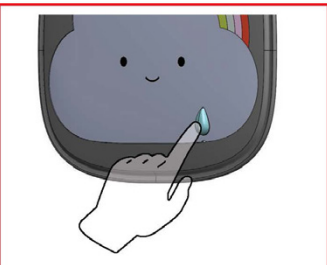
Backseat Baby Mirror

Solidworks CAD // 3D Printing

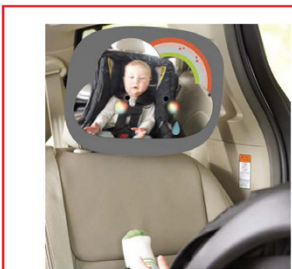
Proof of concept



LEDs UNDER MIRROR
When activated lights flash and spin underneath mirror in correlation to music



RAIN DROP BUTTON
When pressed the button activates the song and light cycle. Button hole is to be cut through mirror

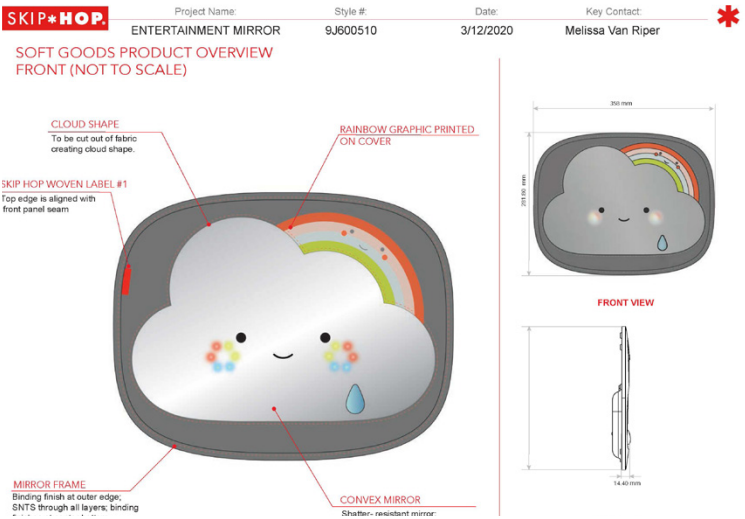


FRONT VIEW



BACK 3/4 VIEW

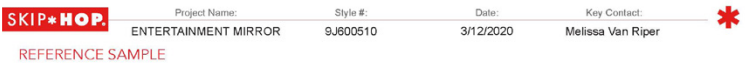
Open the Clamping arms by turning the screw. Fit the clamp around the stroller bar and turn the screw to tighten.



UPDATED BALL JOINT ATTACHMENT
Updated Ball Joint attachment from current model to be used. Snapfit to connect joint to housing. Weight from the mirror shouldn't make it move over time on car ride.



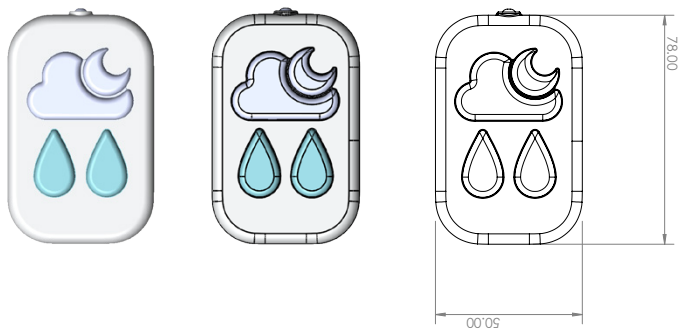
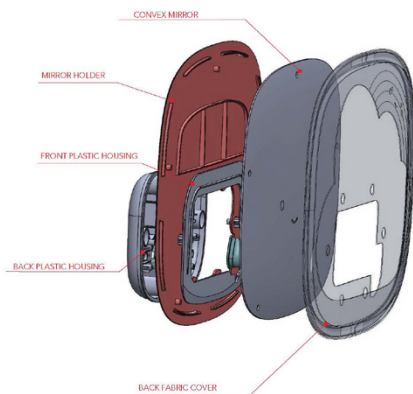
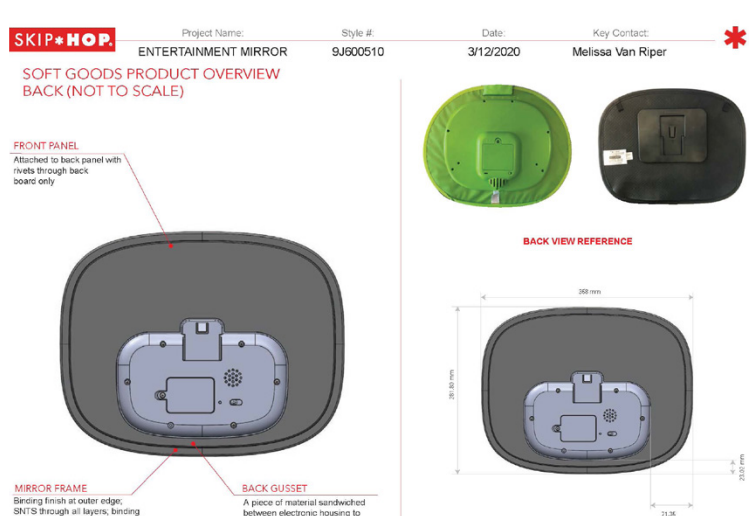
CONVEX MIRROR
Shatter resistant mirror, sandwiched between interior gusset and interior fabric layer before binding. Cloud facial features printed on mirror. Snap mirror into mirror holder.



REFERENCE SAMPLE - Brica® Baby In-Sight™ Magical Firefly™ Car Back Seat Mirror
REFERENCE FOR:
-Mirror electronic construction
-Remote



REFERENCE SAMPLE - SKIP HOP Style Driven Backseat Baby Mirror
REFERENCE FOR:
-Mirror
-Ball Joint attachment



Zoo Puzzle Toy

Sketching Concepts

Ideate further on given concepts for a zoo puzzle toy geared towards toddlers

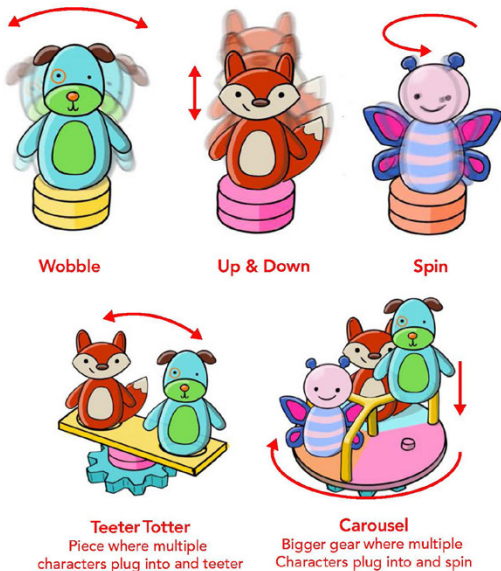
SKIP*HOP. Concept 1 - Spin City
Character Options



Option 1 Dancing Characters
-Each character moves specifically
EX- Fox wags tail, butterfly wings flutter, dogs ears move....
-Plug character to gear
-Spin crank to move gears and characters



SKIP*HOP. Concept 1 - Spin City
Character Options



Option 2 Moving Pieces/ Park
-Different pieces dictate different moves
EX- wobble, up & down, spin...
-Have pieces that plug into gears that the characters can play on!
-Plug character into piece and it will do a different movements
-Spin crank to move gears and pieces

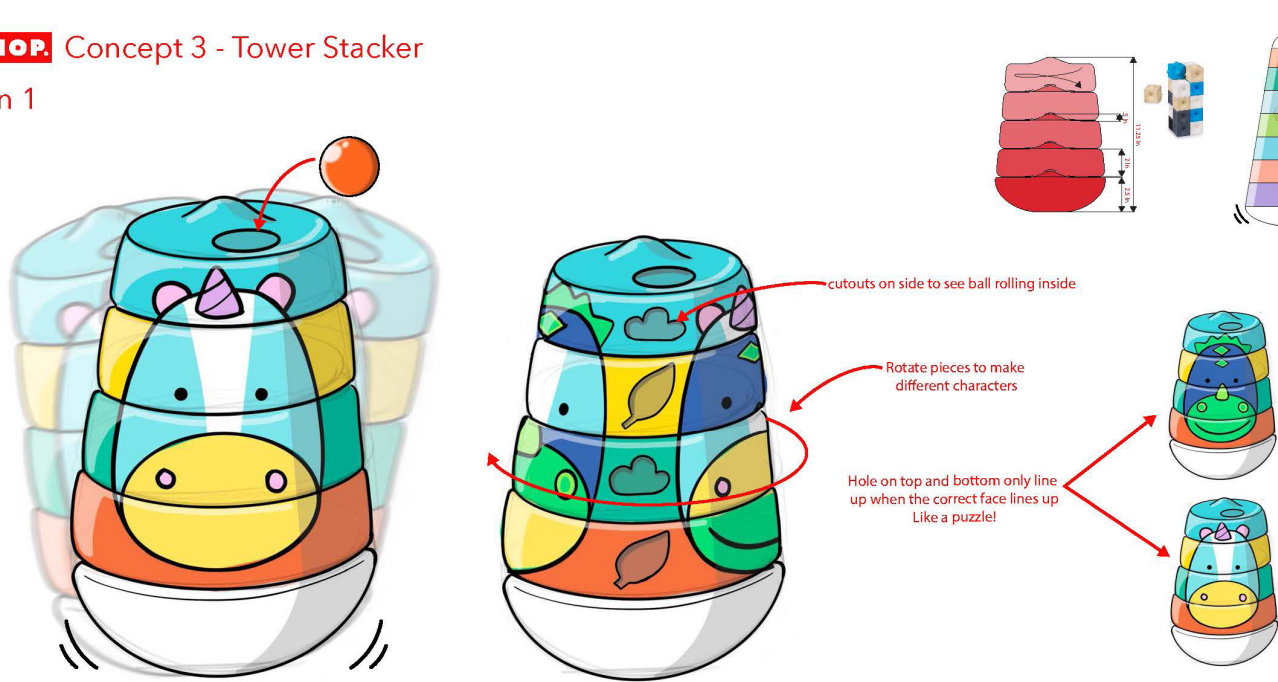


Zoo Puzzle Toy

Sketching Concepts

Ideate further on given concepts for a zoo puzzle toy geared towards toddlers

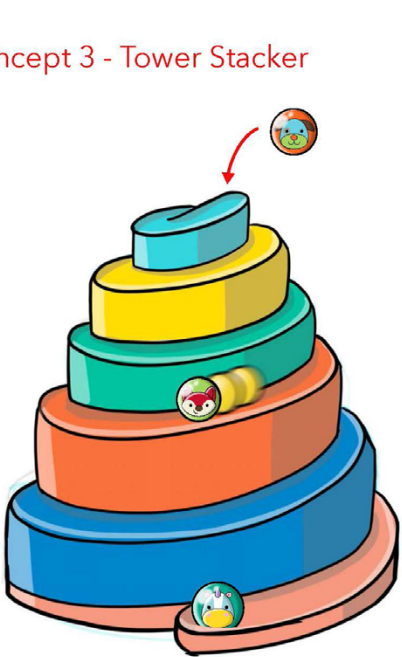
SKIP*HOP. Concept 3 - Tower Stacker
Option 1



- Option 1 Zoo Faces**
- Concave/ convex pieces that rest together
 - A hole in the top and bottom of piece that ball drops through
 - Rotate tower to make ball drop through each piece
 - Line up holes by lining up outside picture
 - Corresponding character cutouts on side to see ball rolling inside

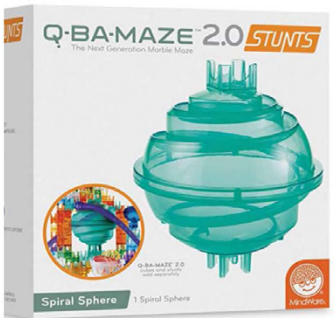
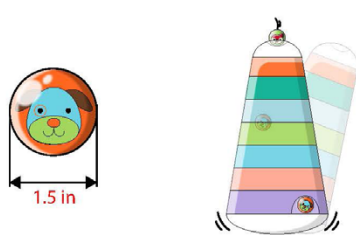
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SKIP*HOP. Concept 3 - Tower Stacker
Option 2



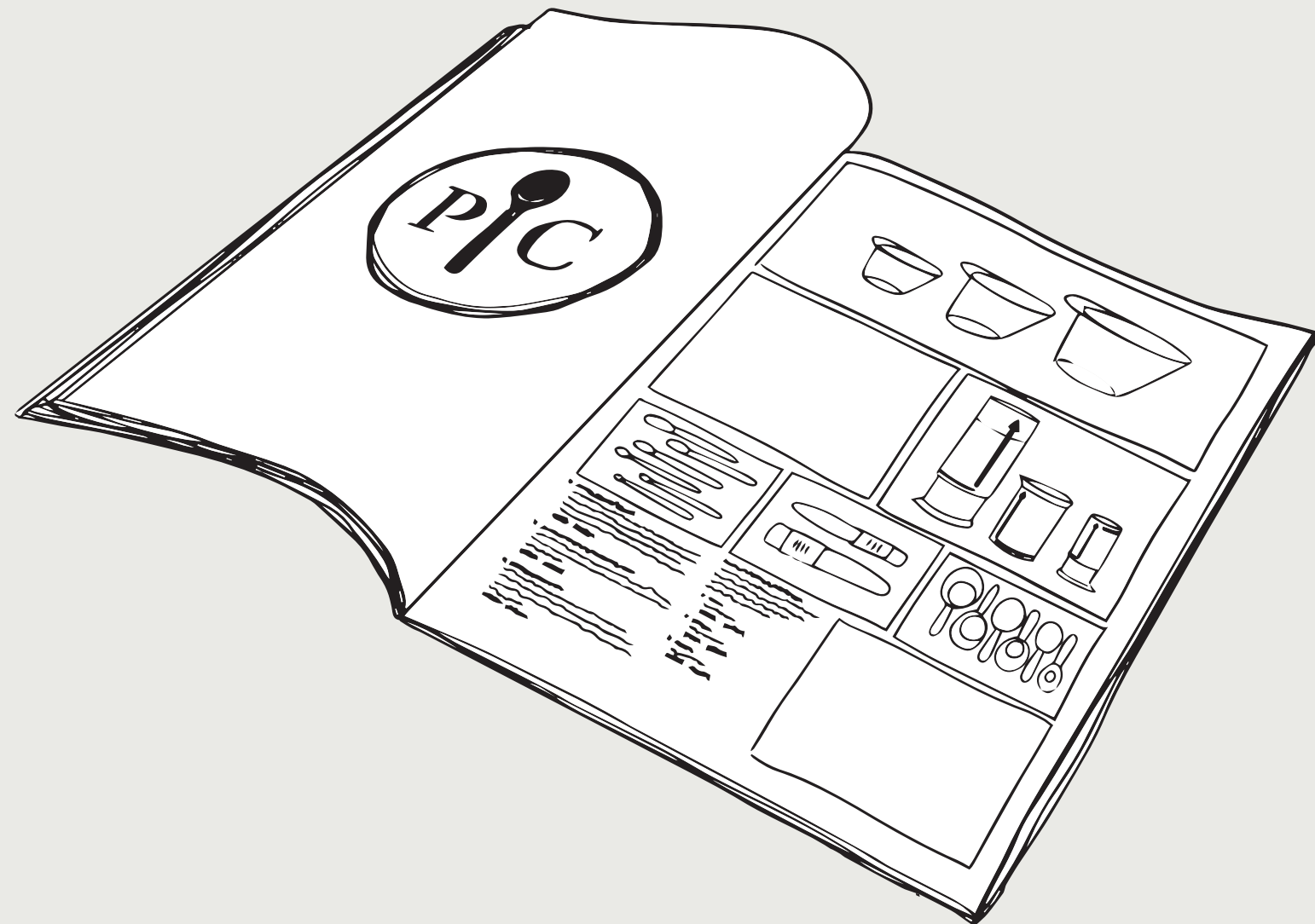
- Option 2 Tower Track**
- Stacking pieces that create a ramp that ball rolls down
 - When all pieces are stacked, Start ball at top and rolls down tower and collects at bottom

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Measure

Redesign Pampered Chef's current measuring tools and apply updated and applicable Visual Brand Language and innovative solutions, to make meal time better.



Adjustable Measuring Spoon



PROS

- “Streamlined design” fits in spice jars
- Grooved thumb prints help move sliders
- Measures- 1/8-1 tsp & 1 tsp- 1 tbsp
- Adjustable slider creates seal for dry & liquid ingredients
- Lays flat on surface

CONS

- Text can be hard to read with small numbers on clear plastic
- Old branding
- Perceived affordance
- Update applicable VBL

Measuring Cups & Spoons



PROS

- Sits flat on counter tops
- Oval shape fits within spice containers
- Leveler for accurate measuring
- Snap together nesting
- Flared rims prevent drips while pouring liquids
- Standard and metric measurements

CONS

- Text can be hard to read with small numbers on clear plastic
- Old branding
- Update applicable VBL
- Spoons (in particular) are unbalanced
- Snap together nesting may come undone
- Is there a way to nest them all together?

Measure All

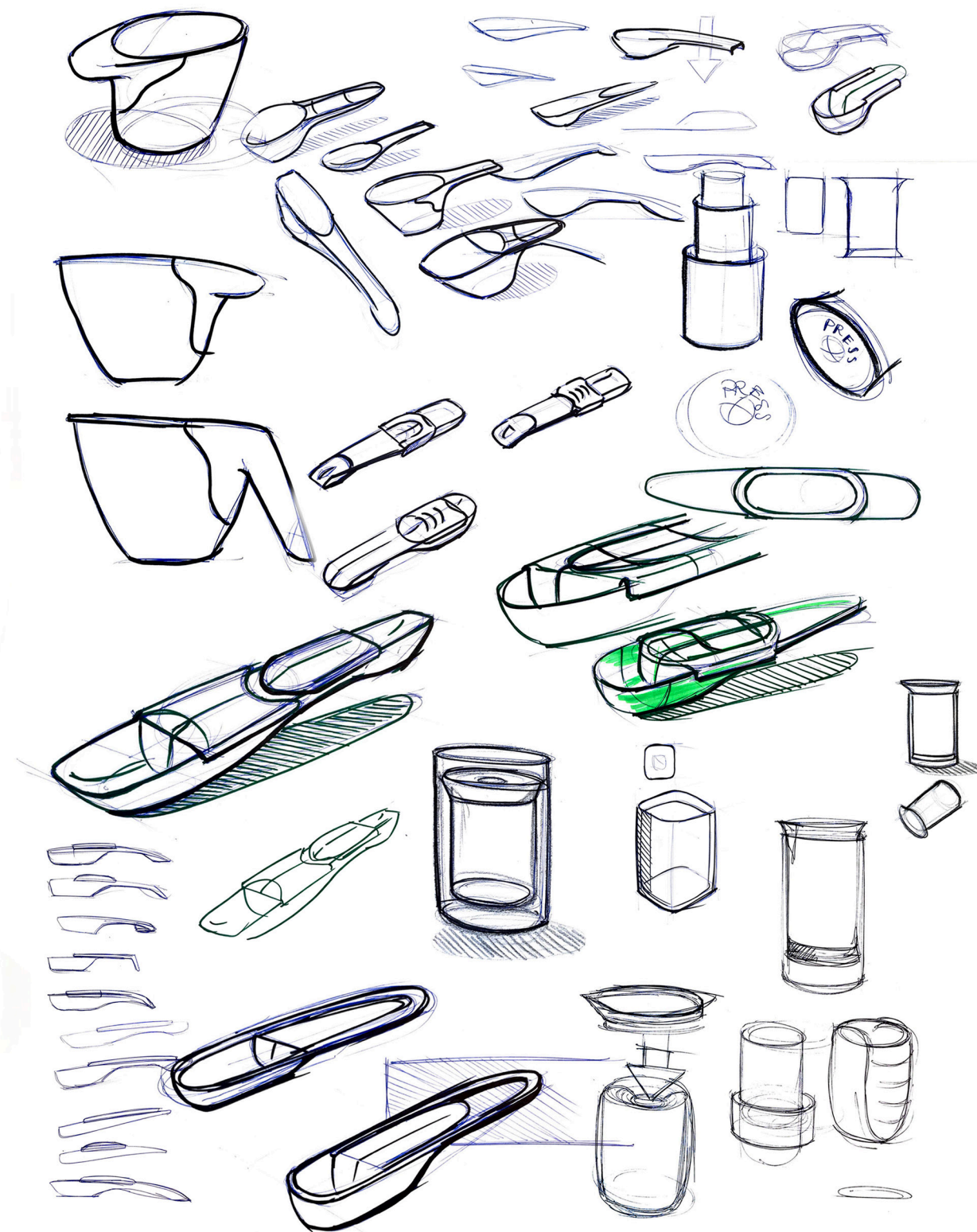


PROS

- Can measure sticky, solid, And liquids
- Available in 3 different sizes
- Push lip to eject solids
- Push down to adjust plunger
- Adjustable plunger can come out for cleaning
- Includes standard and metric measurements

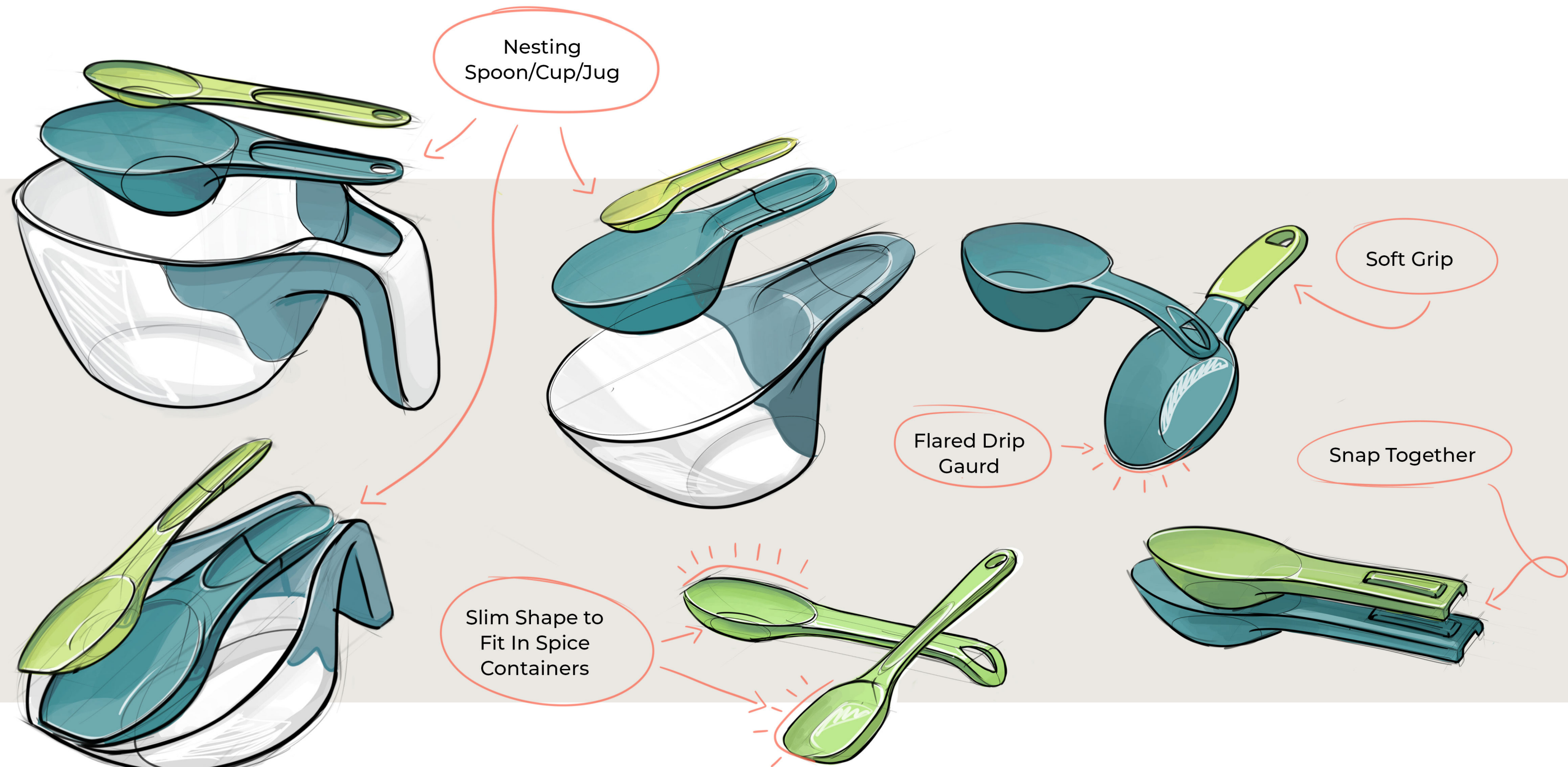
CONS

- Old branding
- Update applicable VBL
- Action points are hard to see
- Markings may come off
- Is there a way to nest them all together?



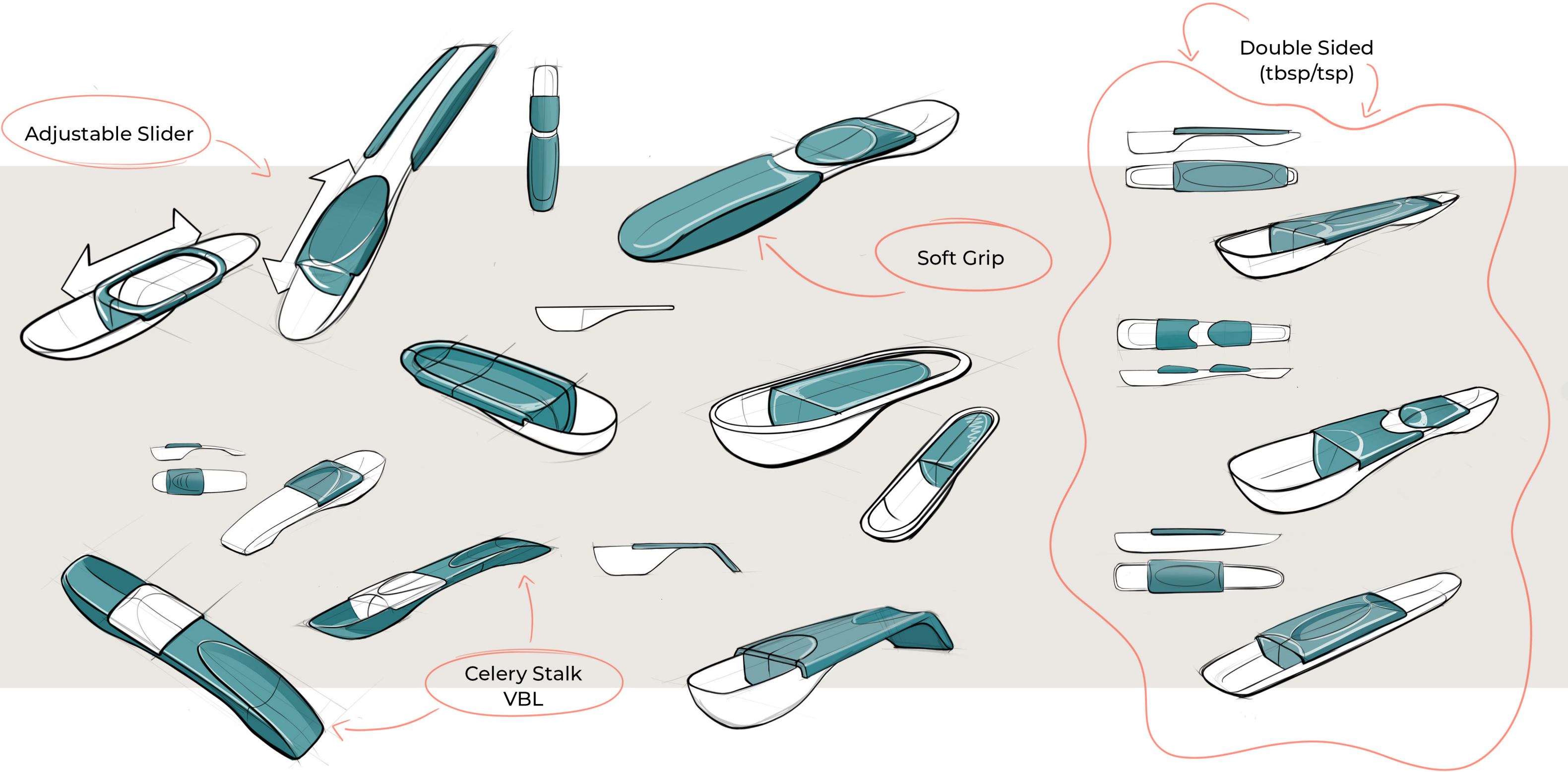
Concept Development

Measuring Cups and Spoons



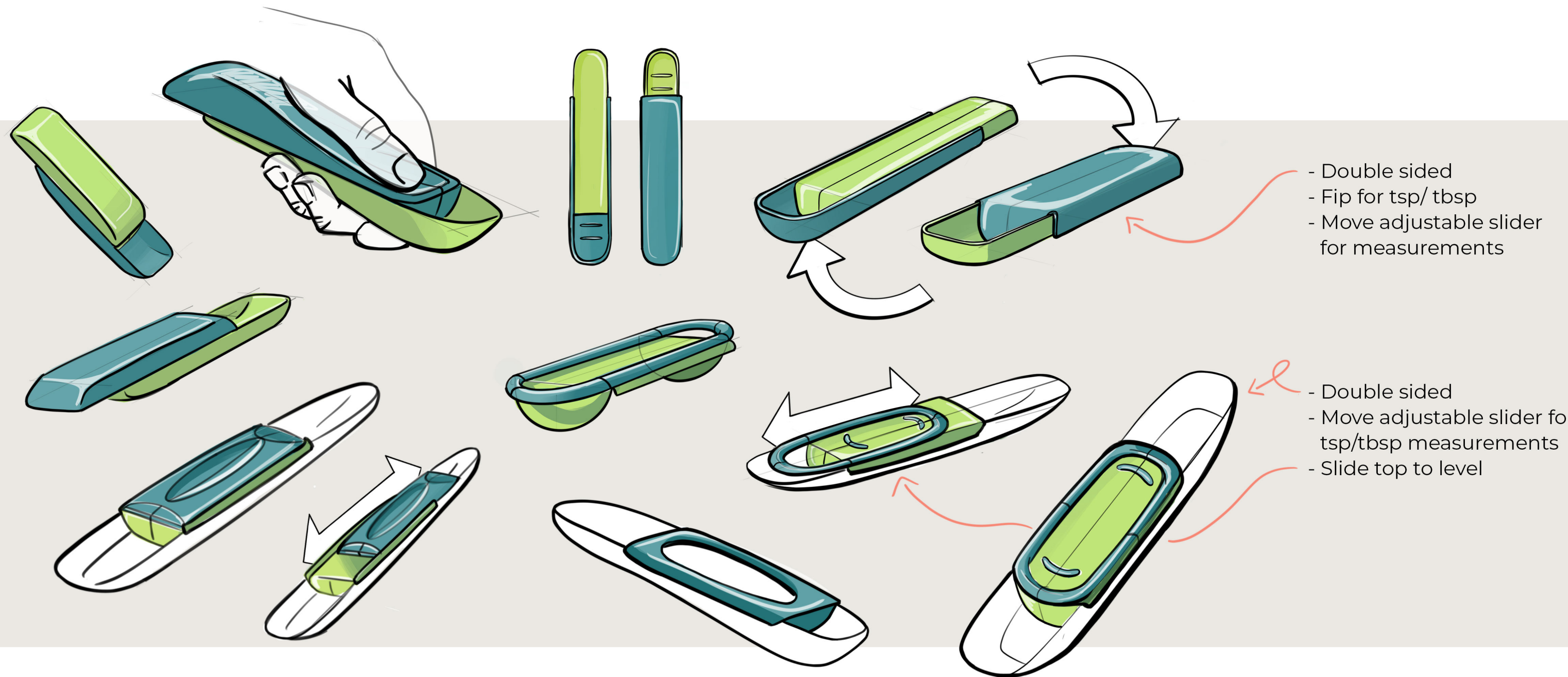
Concept Development

Adjustable Measuring Spoon



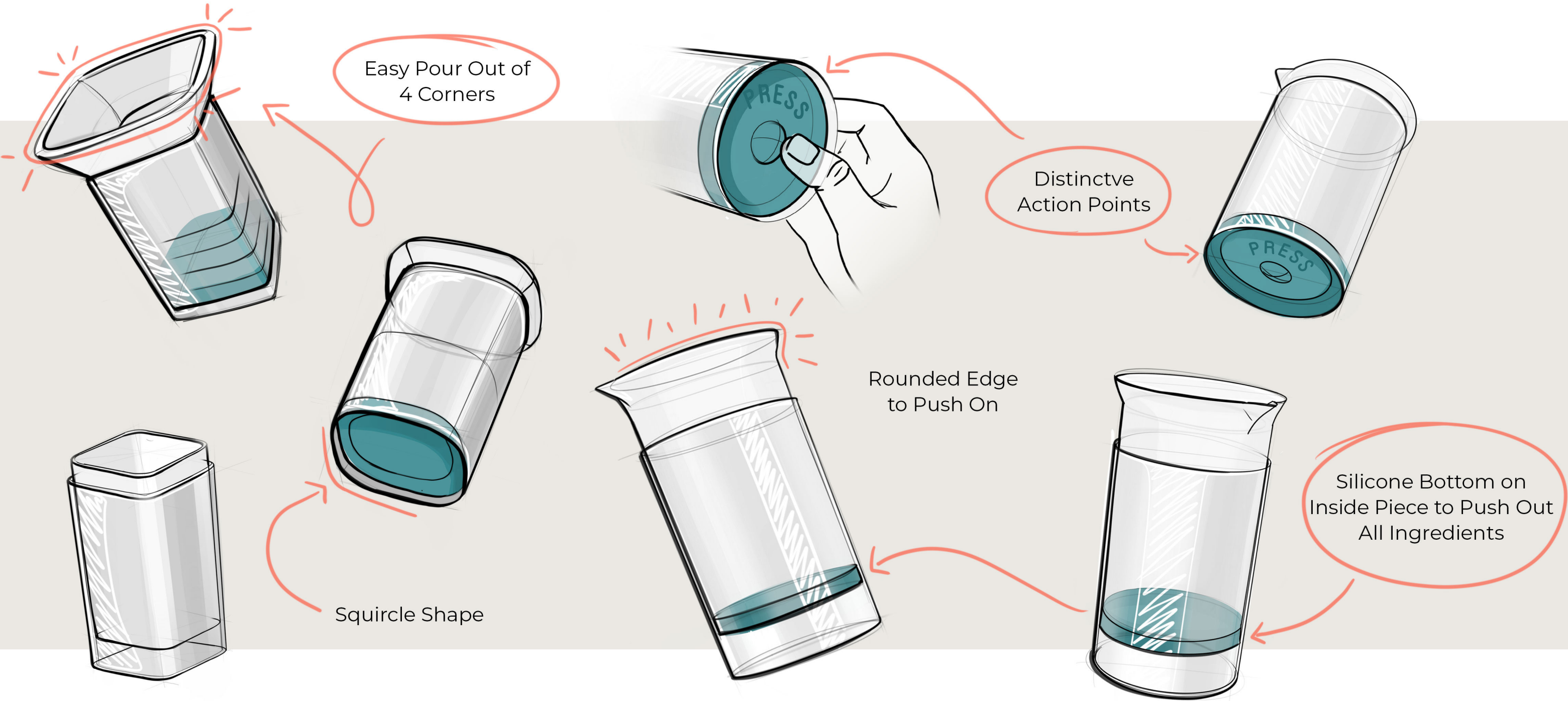
Concept Development

Adjustable Measuring Spoon

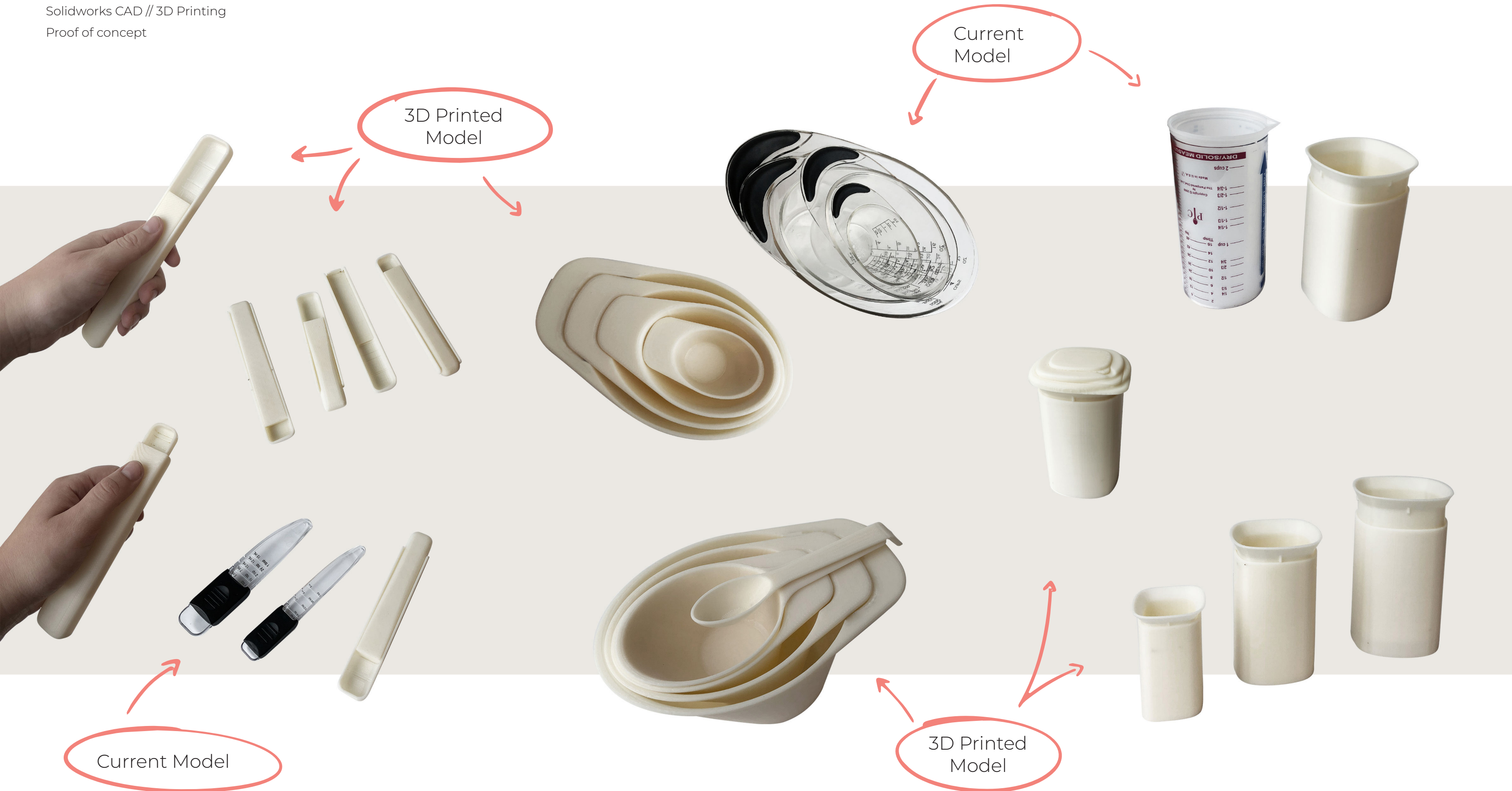


Concept Development

Measure All



Solidworks CAD // 3D Printing
Proof of concept



Measuring Cups & Spoons

- Measuring spoons can fit into spice jar
- Cups and spoons sit flat on counter tops
- Cups and spoons snap together by using magnets embedded under surface
- Complete set of measuring jug, cups, and spoons all nest together for easy storage
- Flared rim prevents drips when pouring liquids
- Each set can be sold separately or together
- Different colors signify different sizes
- Modeled in Solidworks and rendered in Keyshot



Adjustable Measuring Spoon

- Tbsp and Tsp are combined into one tool taking up less drawer space
- Rotate 180° for Tbsp/ Tsp measurements
- Side parts to adjust for different measurements
- Rounded ends and streamlined design fits into spice jars
- Sliders create seal so it can be used with both wet and dry ingredients
- The two pieces snap apart for easy cleaning.
- Modeled in Solidworks and rendered in Keyshot



Measure-all

- Measure both dry and liquid ingredients
- Squirle shape allows user to pour liquids out all four corners
- Flared rim prevents drips when pouring liquids
- Measure-all comes in three different sizes that all conveniently nest together for storage.
- Silicone bottom to create a seal between the two parts and to push out ingredients.
- Silicone cap fits on both top and bottom edges
- Caps all nest click together for storage
- Cap can also function as spatula to scrape off excess when measuring solids
- Different colors signify different sizes
- Modeled in Solidworks and rendered in Keyshot





Nod



A **sleep light device and app for children and teens** aged 7-15 that work together to help **create trust between parents and teens** by **reducing cellphone abuse at night** and **enabling a healthy sleep schedule**.



Sleep is vital for people of any age.

For **teens**, though, **profound mental, physical, social, and emotional development** requires **quality sleep**.

Students who got just one less hour of sleep per night for three nights in a row experienced a cognitive slide equivalent to two grade levels.

When it comes to children and sleep, there are huge consequences to even small amounts of sleep deprivation.

Grades 6-8, 6 out of 10 (57.8%) did not get enough sleep

High-school 9-12, 7 out of 10 (72.7%) did not get enough sleep



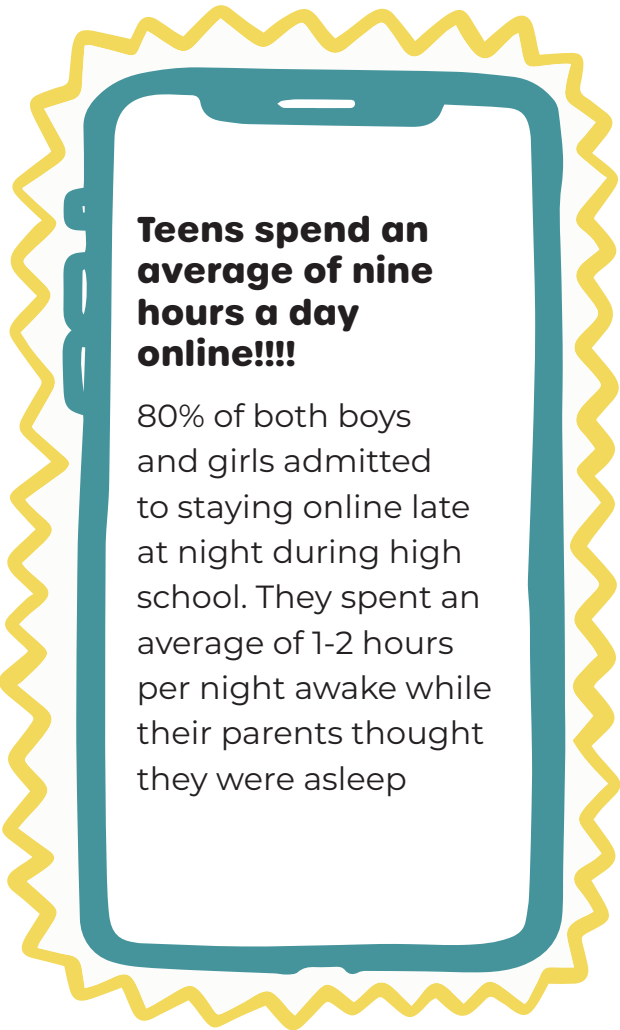
Generation alpha, is the **first generation** who is raised **completely** with **mobile devices**.

The average age children get their first cellphone is **-10.3**

But it isn't a question of what is the right age, its more of a **question between the family**, what is right for them.

Initial Research

-Technology is integrated into almost every aspect of modern life, even sleep.



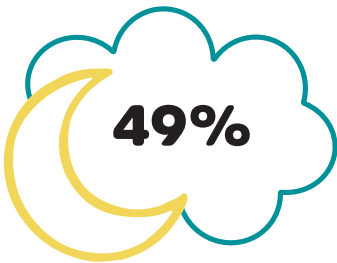
Electronic lights (blue light) delay the production of melatonin



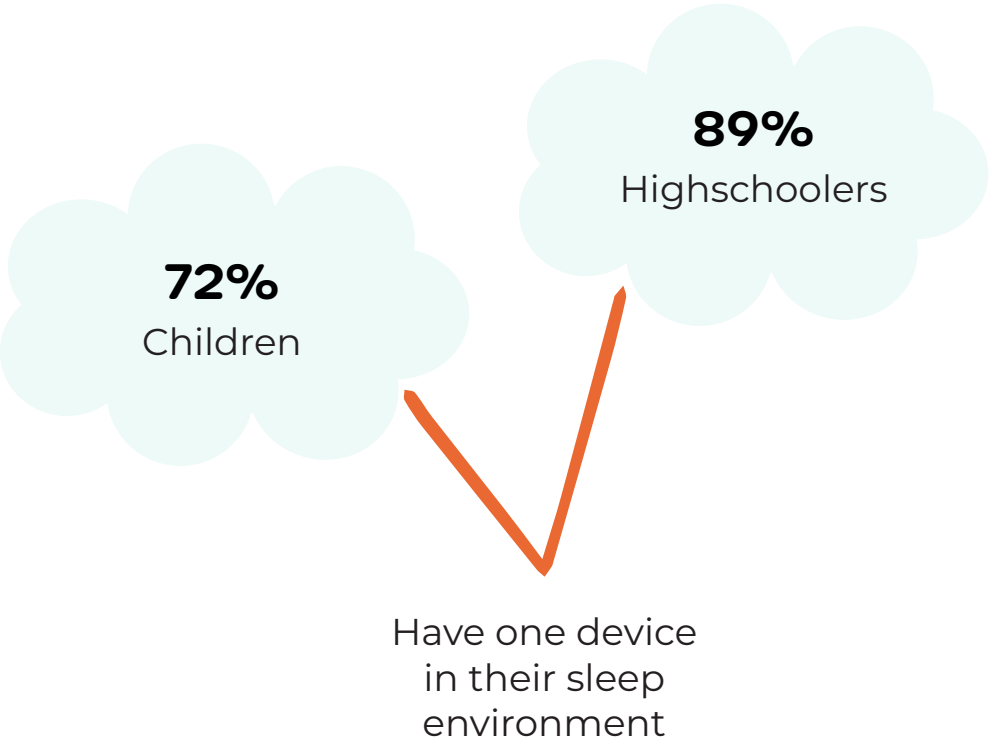
Content stimulates the mind and prevents you from falling asleep



Of kids have missed sleep because they spent too much time on a device



Use screens before bed, which negatively affects sleep habits





So why not just take away the phone at night?

Youth see their **phone as a lifeline to friends**, connecting with peers is seen as a large milestone in this age group.

Taking away a phone can be seen as an unfair punishment and can **cause trust issues between child and parent**.

Users depend on phone for **more than just communication**. Phones are used as alarm clocks among other things.

Parents and children must create a **balance between trust and responsibility**.

One way many have found agreement is finding a place to **“park” phones at night**.

User Persona



Bio

Lives with her parents and older brother. Goes to school and participates in after school sports. Has average grades. Likes to play video games with older brother after school. Hangs out with friends on the weekend.

Wants & Needs

Wants to be an independent 6th grade student with a cellphone, to contact friends, use social media, listen to music on etc.

Name

Olivia Baker

Age

Eleven (11)

Location

Oak Park, IL

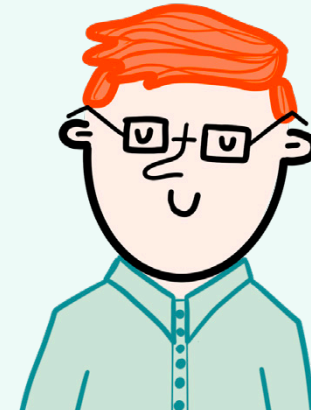
Profession

6th Grade Student

Frustrations

Parents are hesitenet to buy her a cellphone, doesn't want her parents looking at her phone all the time. Feels left out without one.

Technology Used



Bio

Lives in the suburbs with wife and two children. Works full time as an engineer. Coaches his daughters soccer team on the weekend. Likes to read and spend time with his family on his free time

Wants & Needs

-A way to keep a watchful eye over the use of his children's use of technology.

Name

Jacob Baker

Age

Thirty Nine (39)

Location

Oak Park, IL

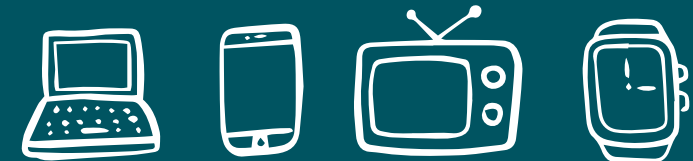
Profession

Engineer

Frustrations

-Worried that his children will spend to much time on their phones and develop unhealthy habits
-Worried his children will resent him if he takes away their devices.

Technology Used

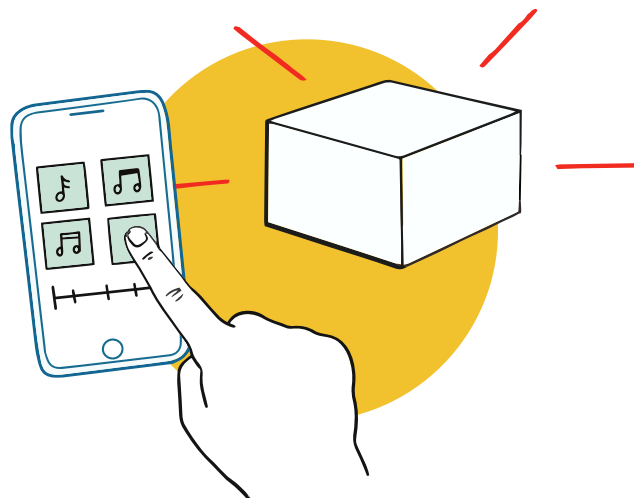


Personalization



Parent and child can **program** both **device and app** to fit into their lifestyle.

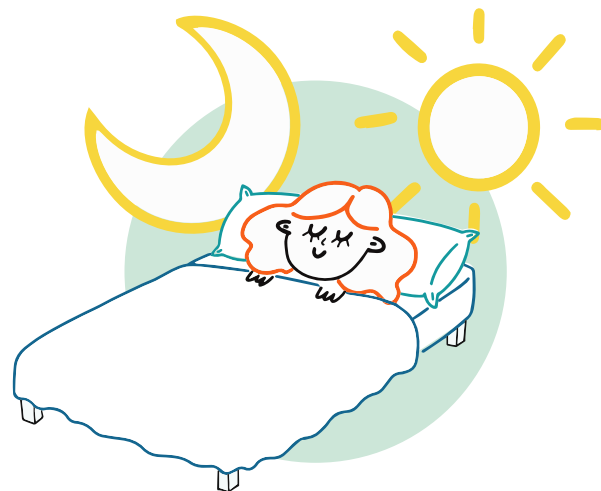
Simplistic Design



App should have a **simplistic design** to appeal to a **range of users**.

Device should appeal to modern technology.
(Not a Toy)

Establish Routine



App and device should **work together** to create a **bed time/ morning routine**.

Build Trust/
Reward Independence

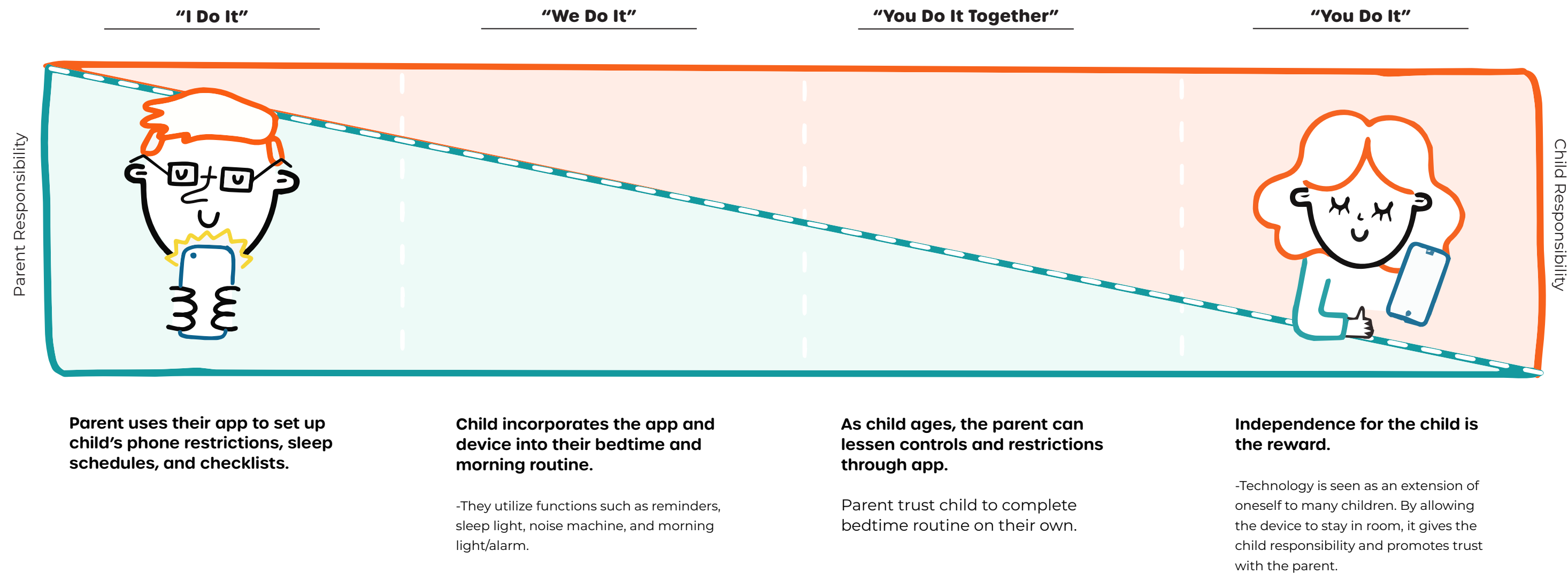


As child ages, overtime as parent seems fit, parent can lessen controls through app

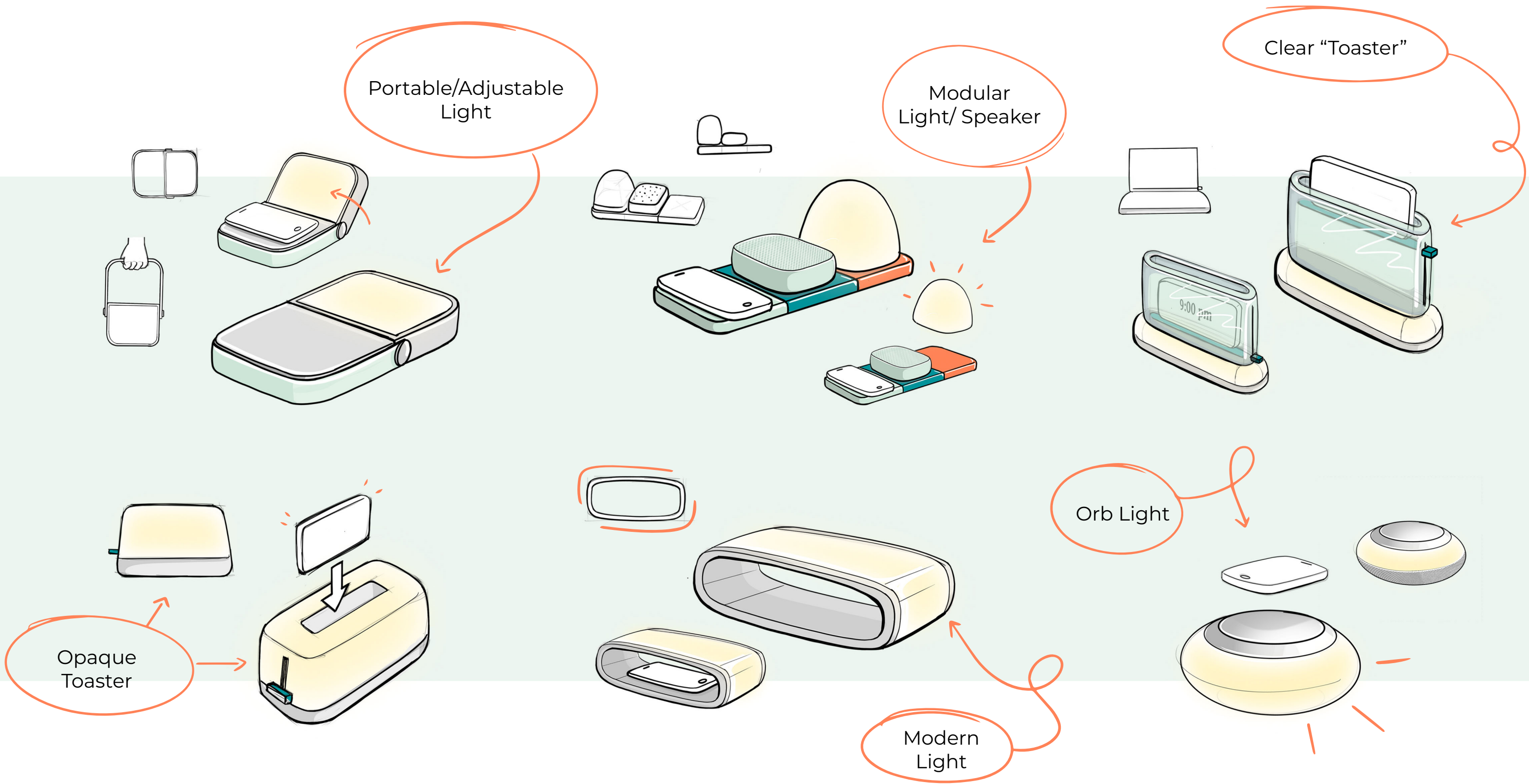
Rewarding independence to child

The Gradual Release of Responsibility

Solidworks CAD // 3D Printing
Proof of concept

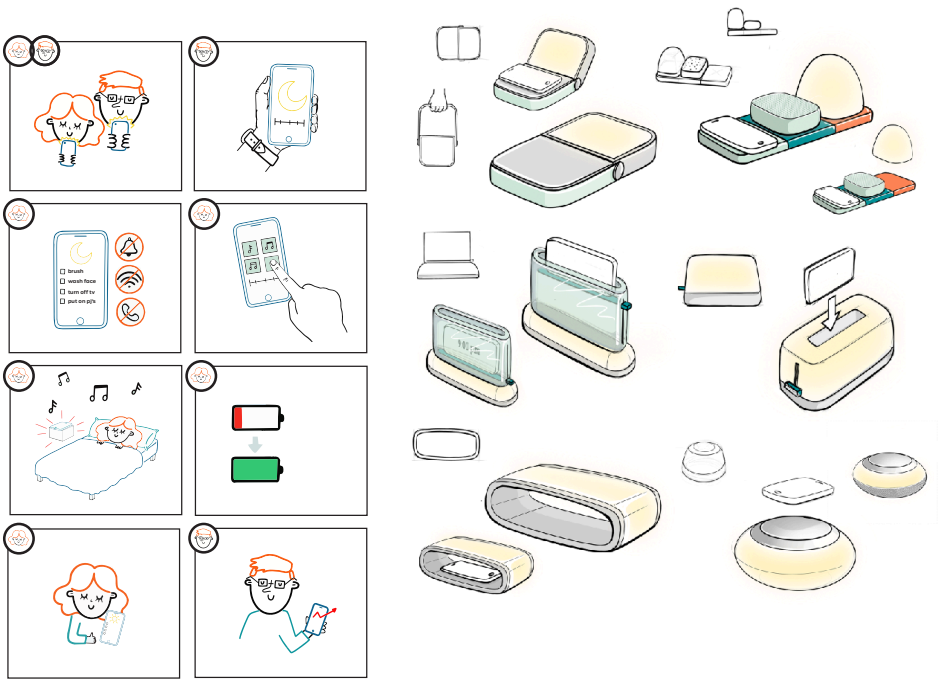


Initial Sketches



Concept Development

Presented Concepts



Interview with stakeholders including both parents and children/ teens aged 8-18 were held to gauge feedback and probability of the user journey and to receive feedback on sketches of the concepts.

Survey

Nod User Validation (Parent)

This sleep light, wireless, charger, and app work together to help create trust between parents and teens by reducing cellphone abuse at night and enabling (promoting) a healthy sleep schedule.

* Required

Name (First, Last) *

Your answer

What are your children's age(s)? *

Your answer

Does your child have a cellphone or other device? (Check all that apply) *

☐ Smartphone
☐ Cellphone
☐ Laptop
☐ Apple Watch
☐ Tablet
☐ Other: _____

Nod User Validation (Child)

This sleep light, wireless, charger, and app work together to help create trust between parents and teens by reducing cellphone abuse at night and enabling (promoting) a healthy sleep schedule.

* Required

Name (First, Last) *

Your answer

Do you have a cellphone or other device? (Check all that apply) *

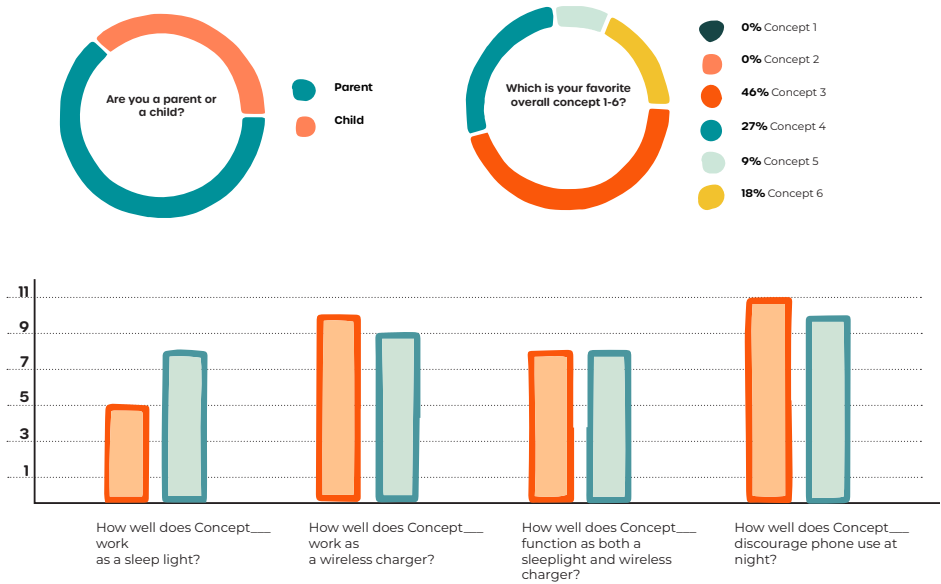
☐ Smartphone
☐ Cellphone
☐ Laptop
☐ Apple Watch
☐ Tablet
☐ Other: _____

What are common ways you use your device at night? (5-11pm)

Your answer

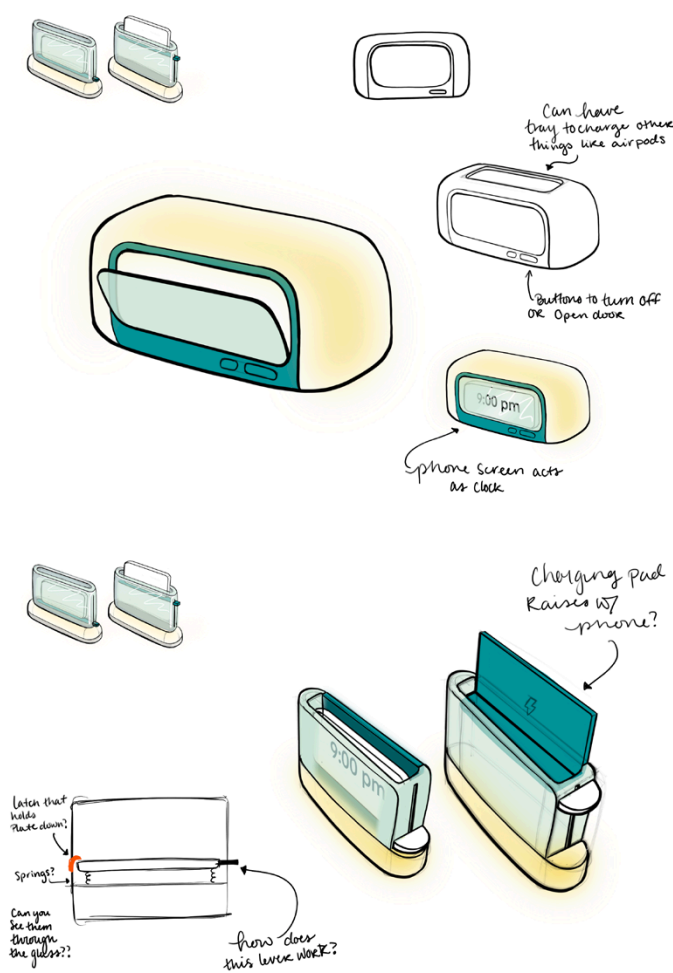
Different surveys were sent out to both parent and child demographics to revive concept feedback. Photos of concepts were shown with questions considering usability, style, and probability.

Results



Results from survey were compiled and compared across demographics. These results were taken in account and referenced when moving into concept refinement.

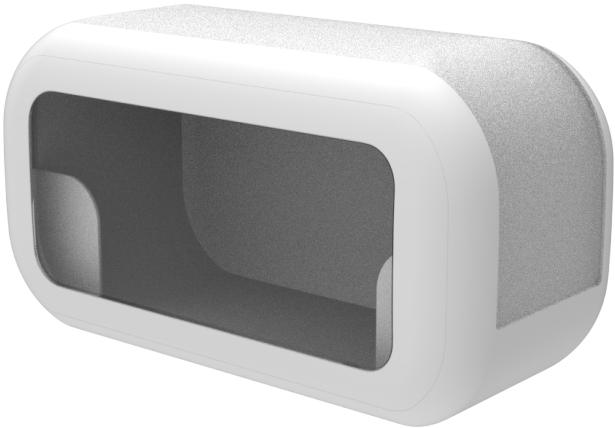
Sketching Ideation



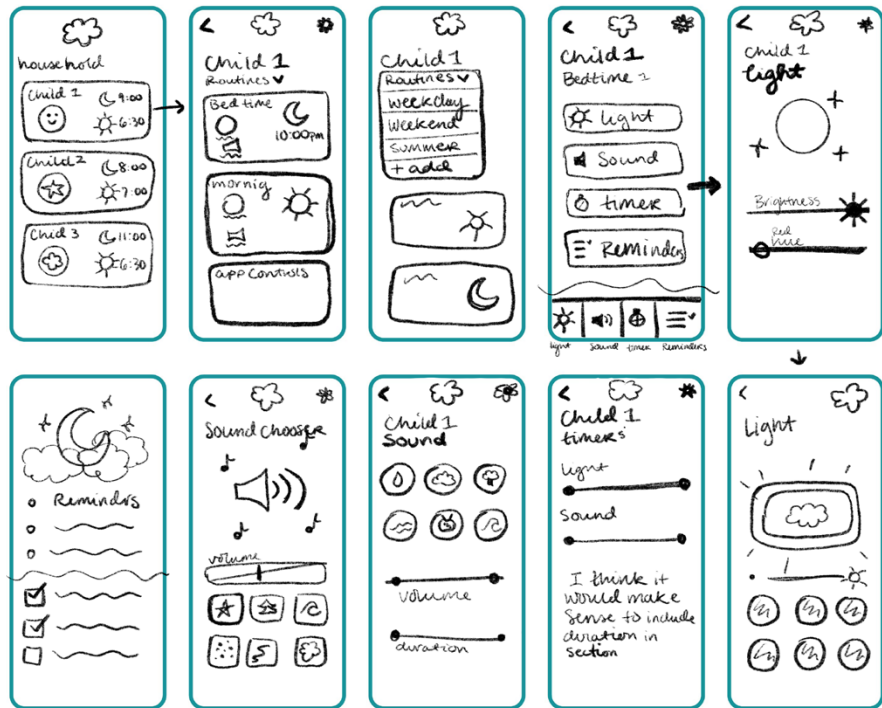
CAD White



Final CAD Direction



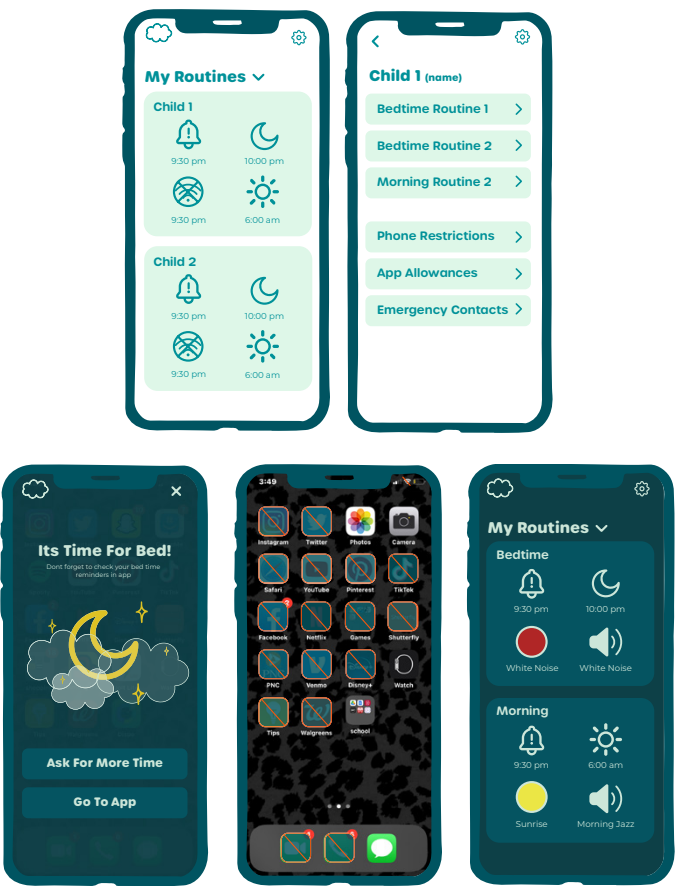
Sketching Ideation



Brand Guide

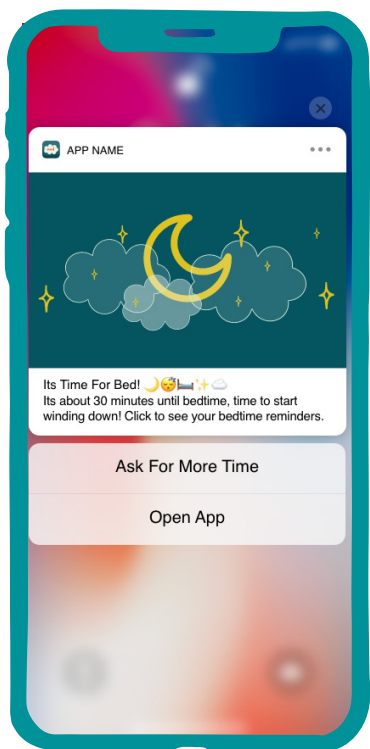


UI Prototypes

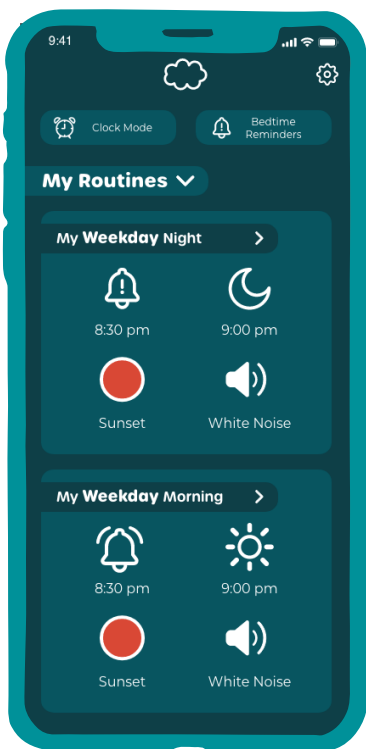


Childs App Walkthrough

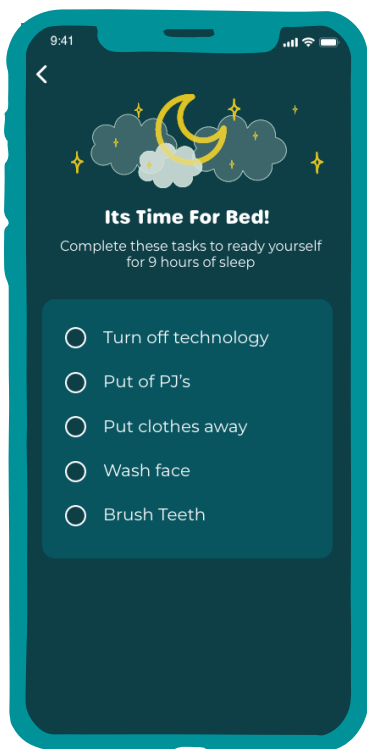
Mockup in Adobe XD



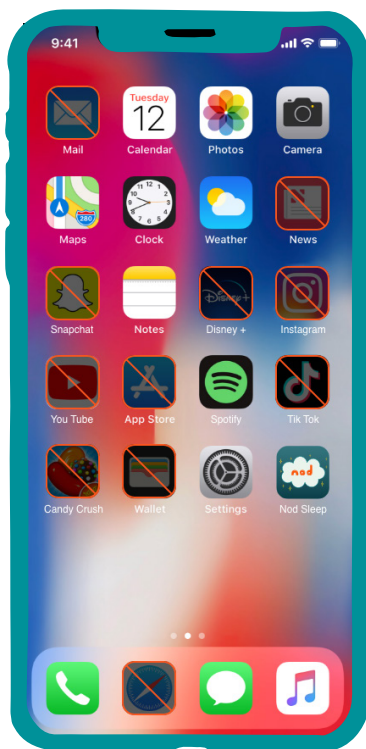
Every Night 30 minutes before bedtime child gets a notification on their phone to start winding down.



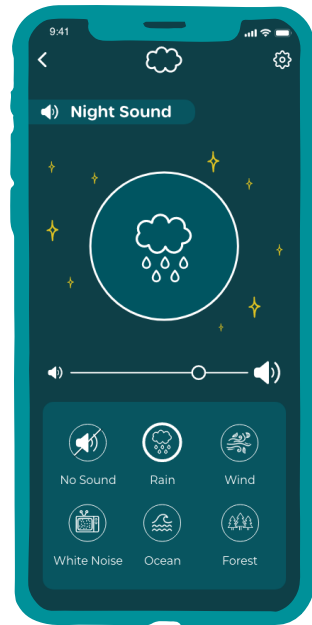
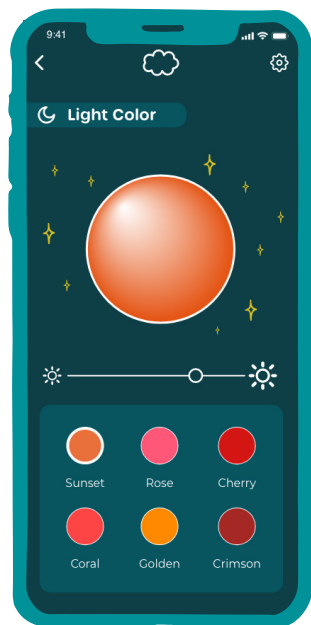
The routine dashboard gives an overview of their nightly and morning routine. Users can see what time to expect alarms to sound, reminders to go off etc...



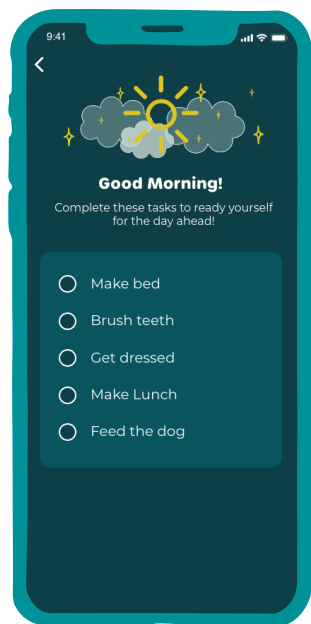
Bed time reminders let the child take responsibility over completing their routine w/ out constant nagging from their parents



Phone capabilities such as call, text and access to certain apps would be restricted to discourage phone use.



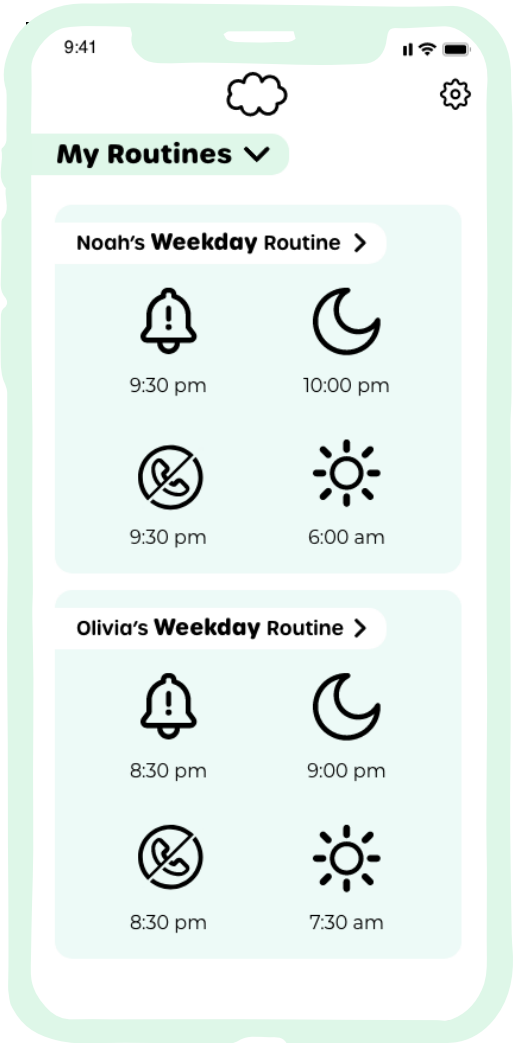
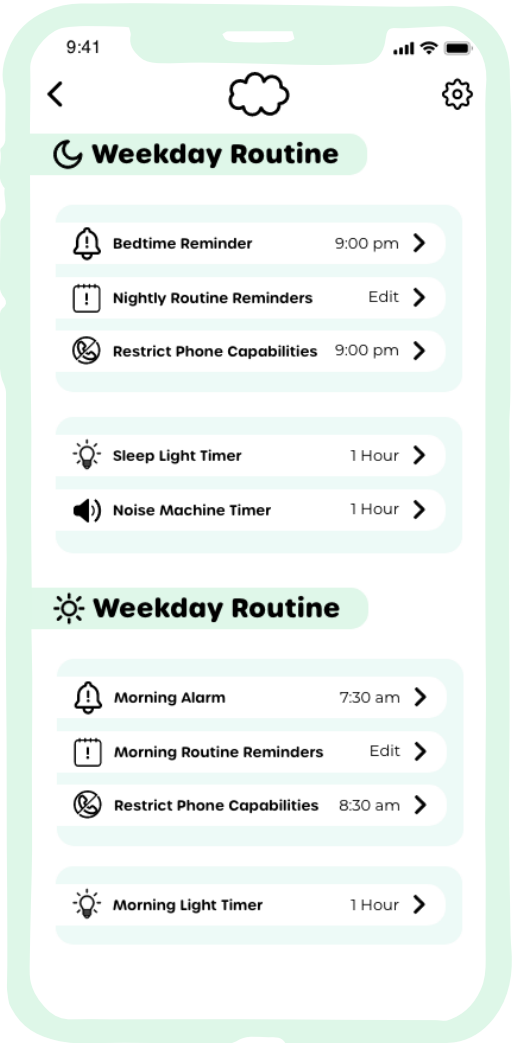
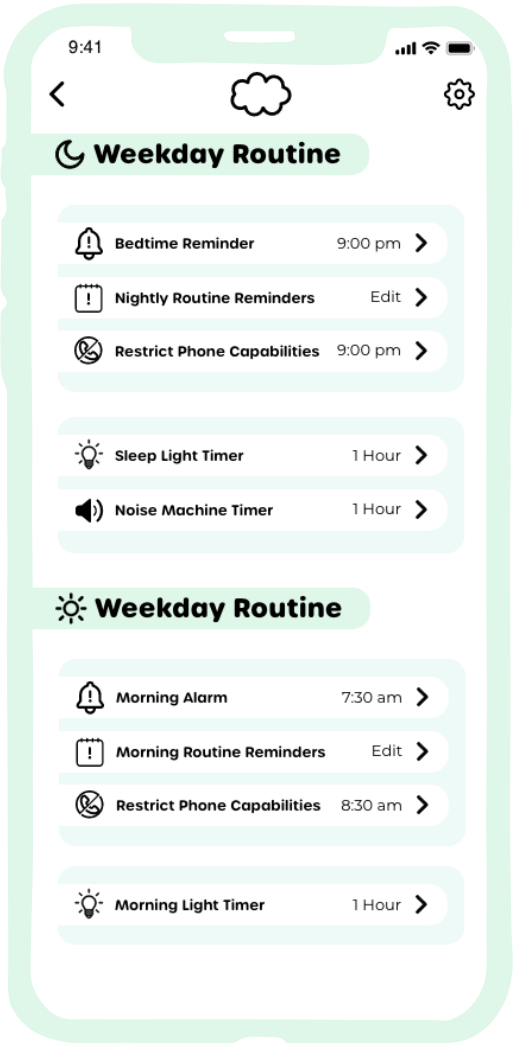
Child can set certain features like the color of the light and the noise they fall asleep to



In the morning after their alarm goes off users can view their morning routine. After a specified time by the parents their phone capabilities resume their normal function.

Parents App Walkthrough

Mockup in Adobe XD



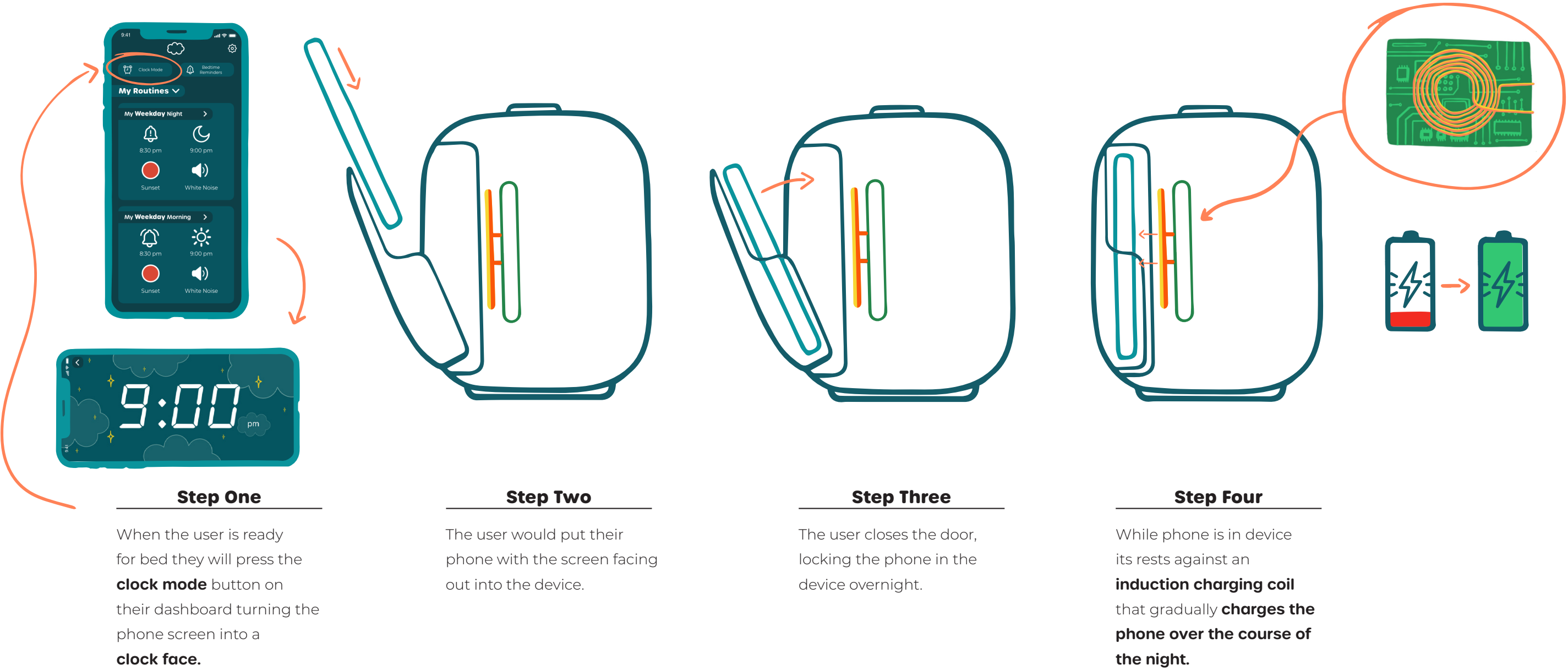
Parents have an overview of their children's nightly and morning routine.

From there parents can put in place different restrictions and capabilities for each child during their bedtime and morning routine

These restrictions include- Certain app and wifi usage and limited call and text capabilities

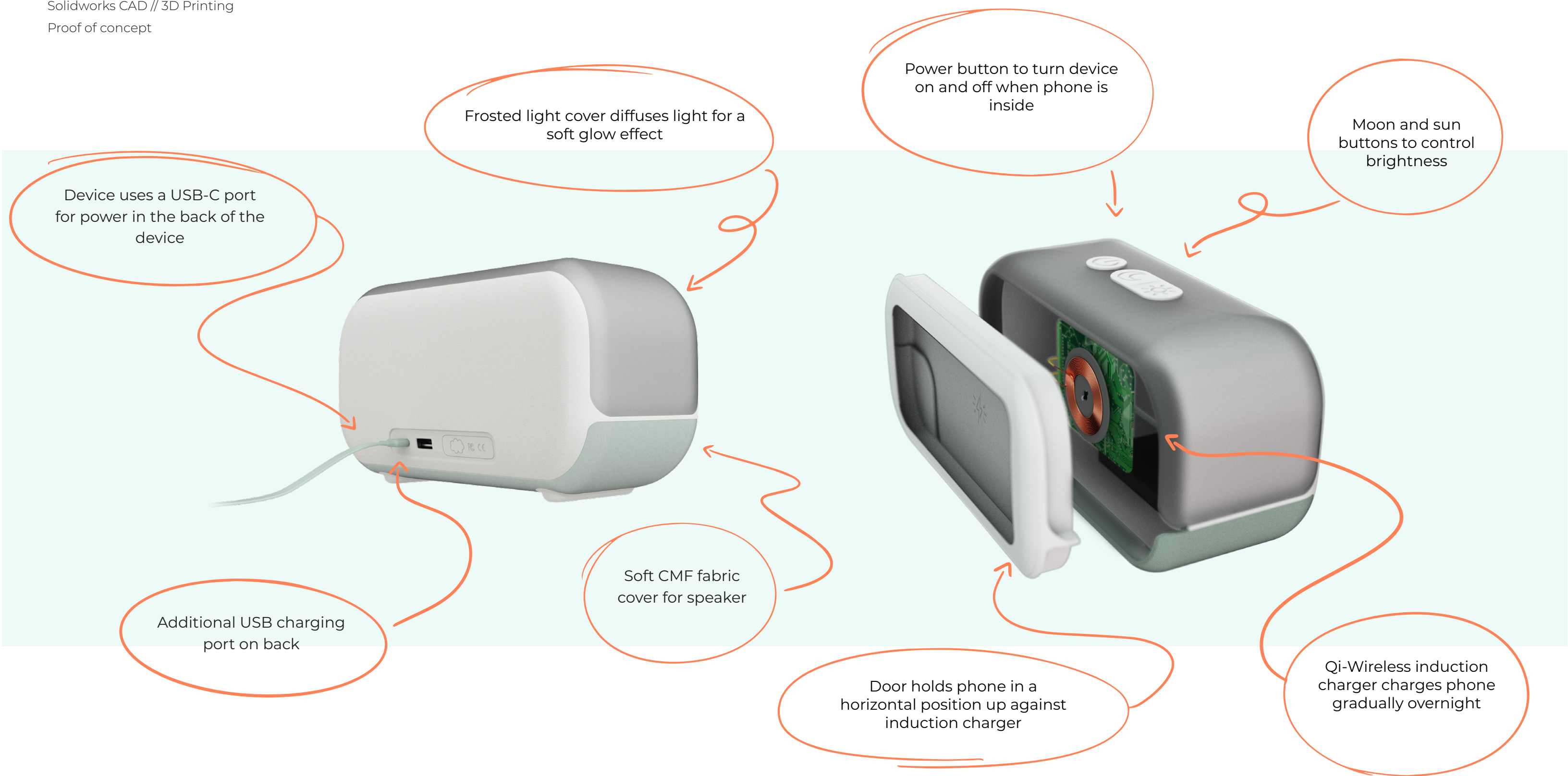
Parents restrictions can be released over time as the child ages and becomes more responsible.

Final Charging Guide



Final Design Call-Outs

Solidworks CAD // 3D Printing
Proof of concept



Device uses a USB-C port for power in the back of the device

Frosted light cover diffuses light for a soft glow effect

Power button to turn device on and off when phone is inside

Moon and sun buttons to control brightness

Additional USB charging port on back

Soft CMF fabric cover for speaker

Door holds phone in a horizontal position up against induction charger

Qi-Wireless induction charger charges phone gradually overnight

Final

- Device Glows **a warm red color at night.**
- Red light has a lower color temperature than sunlight. It can ease you into your natural sleep cycle easier.
- User can select the red hue of their sleep light in app.
- User closes door and phone is locked in device over the course of the night.
- As the child falls asleep the device light and sound **gradually dim to nothing.**



Final

-In the morning 30 minutes before the alarm goes off the **device emits a bright morning light** that gradually fills the room,

-When the alarm sounds the door opens and the user can remove their device.a



Vegetable Pillows

Garden fresh **hand made pillows** using pre-loved and sustainably sourced materials. Each design was carefully patterned and sewn together to create a playful cozy addition to any couch.



Vegetable Pillows

Vegetable pillows and product tags.

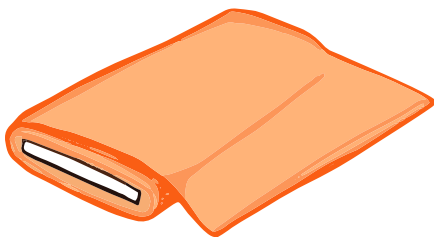


Vegetable Pillows

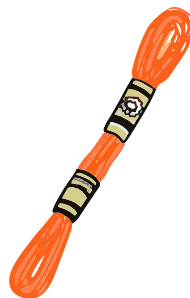
Freelance Commission

Design and create 25 plush carrots with NO green tops to be used for Bath and Body Work Spring/ Easter promotional content.

Materials



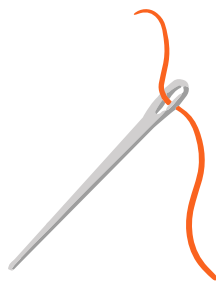
Orange Felt



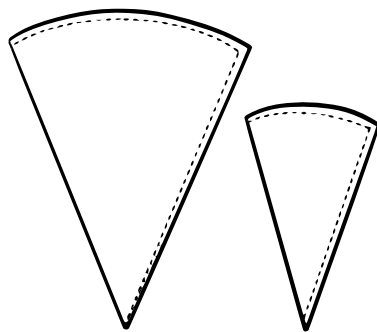
Embroidery Floss



Poly- Fill

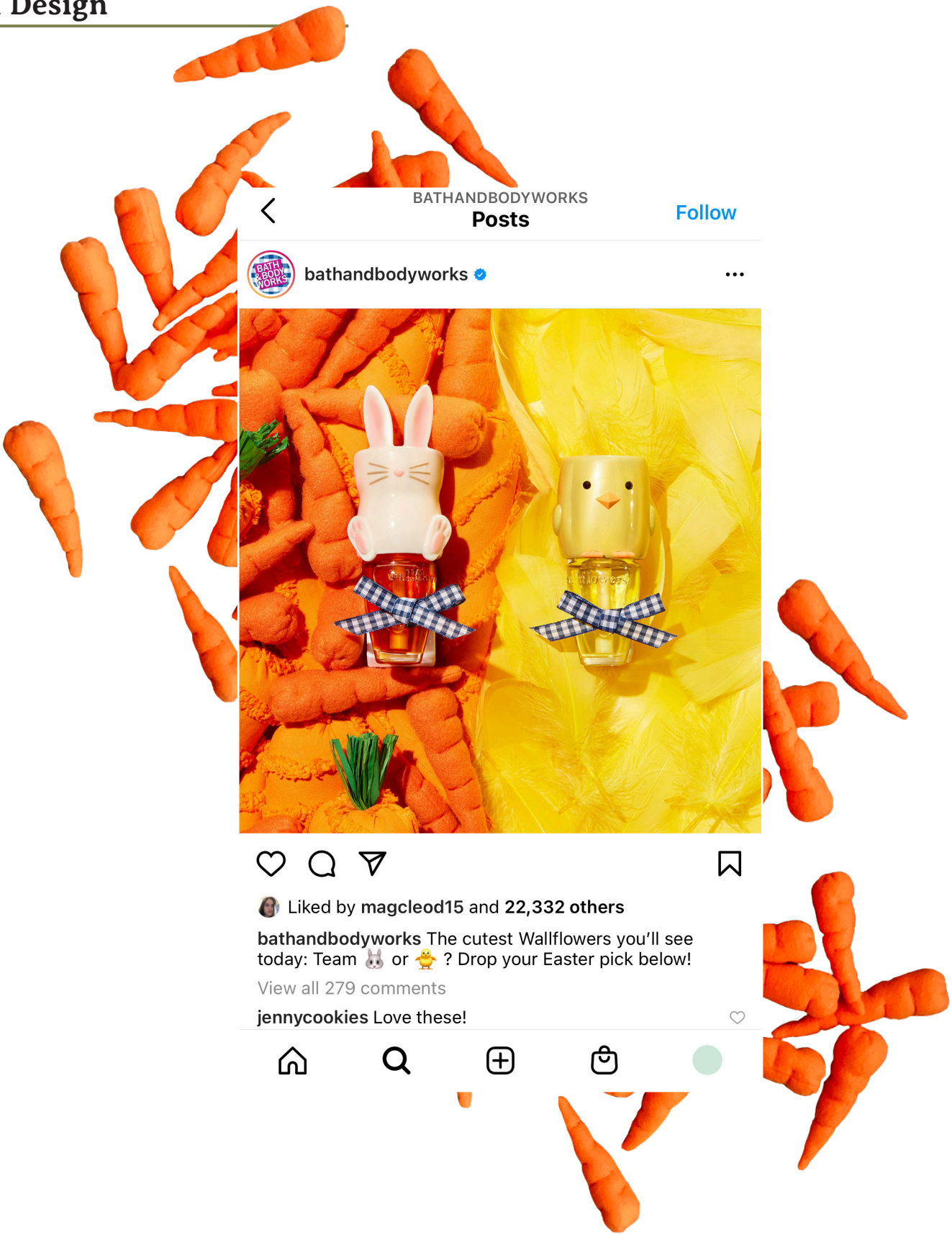


Needle to Sew



Pattern

Final Design





thank you!

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