

# TRUK

*A CUSTOMIZABLE PLAY-SET  
AND PUSH-CAR*



# PROBLEM

Many children lack **BACKYARD** spaces, and traditional or **PORTABLE PLAYGROUNDS** are often **INACCESSIBLE**, crowded, or **IMPRACTICAL**.

# USER INTERVIEWS

## KARI

Mother of four



-Limited backyard space means frequent trips to the park, which aren't always convenient.

-Prefers play equipment that is easy to set up and store due to limited storage.

-Finds metal equipment problematic because it gets too hot, and plastic options can feel flimsy.

-Wants a solution that allows her to supervise younger kids while they play close by.

## BLAKELY

Middle Child (11)



-Outgrowing traditional playsets, which feel too small or uninteresting.

-Would enjoy having play equipment at home instead of always needing to go elsewhere.

-Finds parks overcrowded at times, making it hard to play freely.

## BEAUX

Youngest Child (4)



-Prefers playing in a space where a parent or guardian is nearby.

-Dislikes waiting for turns on crowded playground equipment.

-Enjoys interactive and creative play, like building and knocking things down.

# OBJECTIVE

Design a **COMPACT**, easy-to-transport **PLAYGROUND** for shared or private spaces, offering **LOW-FOOTPRINT** play for **KIDS** without **BACKYARD** access.

# SAYS

"Most play things are just the size for babies and I dont fit on them"

"Its not the same playing at school with my friends like at home with sister"

"Mom gets mad at how I play outside like with the mole in the stocking"

Wrangling all siblings and the drive cuts into actually park playtime

# THINKS

Nature and the outside is already fun to play in and with

Swings are only fun with friends otherwise it gets boring fast

# DOES

Gets bored waiting on little sister to finish a "baby activity" before its her turn

Gets in trouble playing with things she shouldnt like a dead snake

Playing pretend bridges the gap between school friends and sisters

Left out at the park area for toddlers but can not go to other area without mom

# FEELS

Playing at home gets boring when we are stuck inside or on driveway

It sucks to see cool outside toys at the store that wouldnt ever fit at home



# THE MARKET AS IT STANDS



Freestanding Kids Slide Set

WFUN

\$170

- Wide variety of ways to play
- Weather Resistant
- Easy to construct
- Hard to collapse or move
- Large Footprint (8'x7')
- All plastic parts



Deluxe Saucer Swing Set

Sportspower

\$100

- Minimal parts
- Medium Footprint (6'x6')
- Needs extra clearance for swing
- Not easy to move or collapse
- Flimsy and prone to rust
- Limited ways to play



Kids Klubhouse Wooden

Phunfix

\$430

- Eco-Friendly Materials
- Open Ended play
- Medium to minor footprint (6'x4')
- Can be broken down
- Large hard to move pieces
- High Price in market



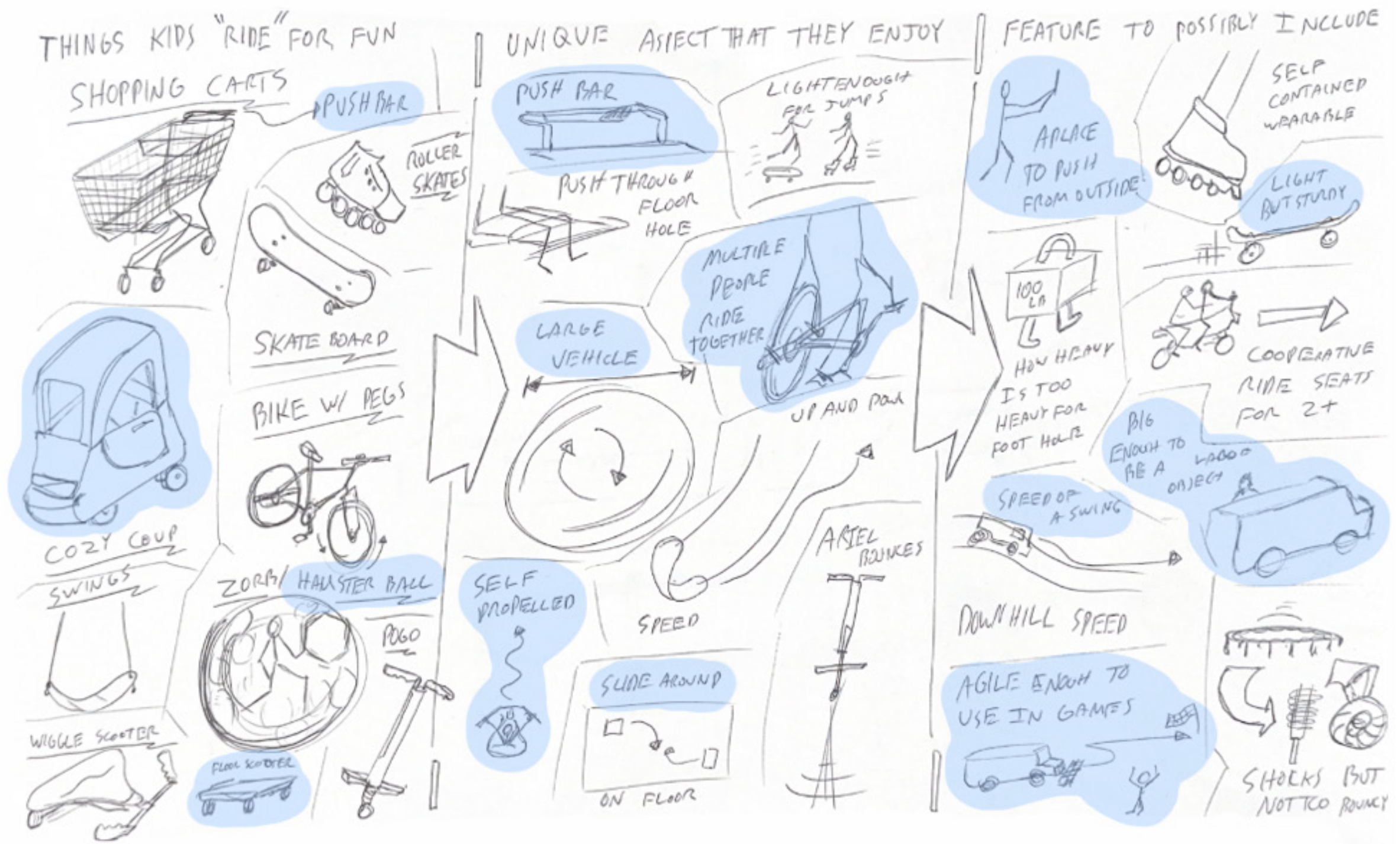
All Around Playtime Patio

Step2

\$175

- Many options to engage play
- Small footprint (4'x 4')
- Can not be broken down easily
- Hard to move after setup
- Almost all plastic

# EXPLORING FORMS OF PLAY



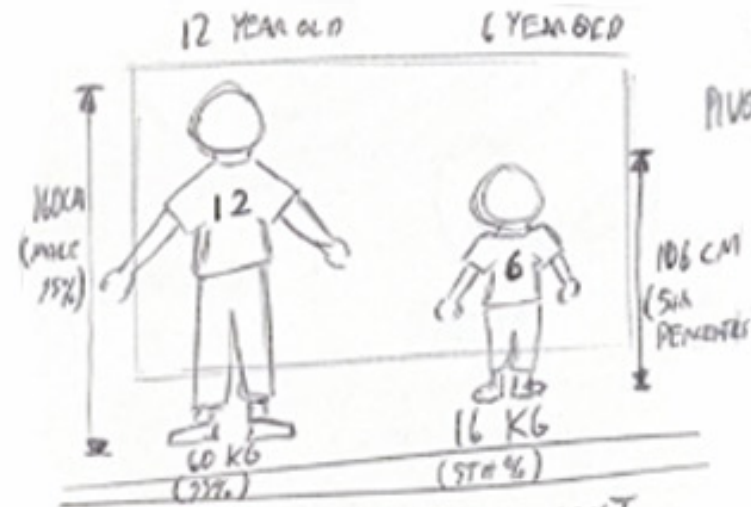
# DESIGN INSPO



# NATURAL INSPO



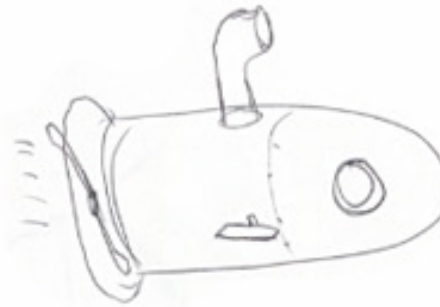
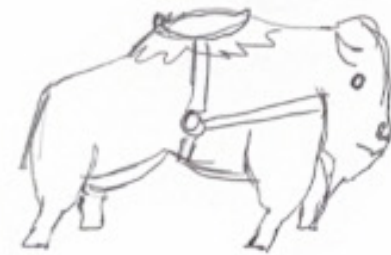
# ANTHROPOMETRY AND CONSTRUCTION



- 1. VEHICLE/FORT SIZE/WEIGHT
- 2. 4 CHILDREN IN 95+ PERCENTILE WOULD TOTAL 240 KG
- 3. FIT SITTING/CROUCHED 125 CM
- 4. NO STEPS OVER 20 CM



THEME?



## MATERIAL

- CHEAP ROTO/VACUUMED PLASTIC

PRO: COST EFFECTIVE | CON: FLAME WATER PUMP

- COMPOSITE BOARD

PRO: MID COST | CON: HEAVY FIRM FORM

- WOOD & STEEL

PRO: STURDY | CON: COSTLY HEAVY

## FRAME/CHASSIS



- WOOD?
- METAL FRAME?
- (STEEL? ALUMINUM?)
- HOLD ROTO MOLD PLASTIC?

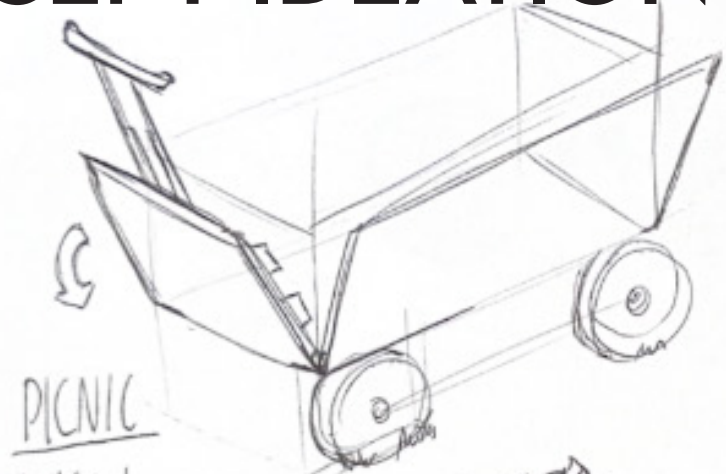
## WHEELS



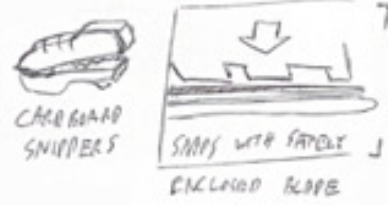
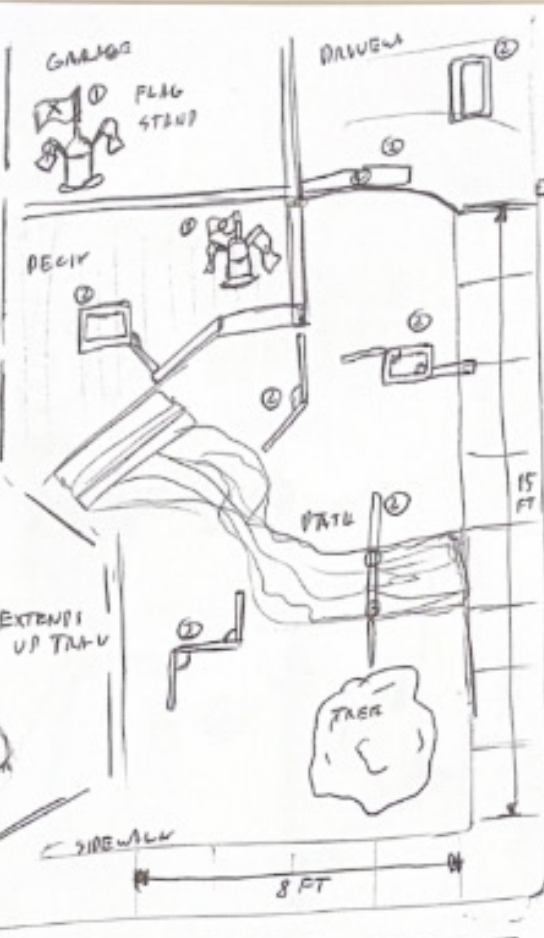
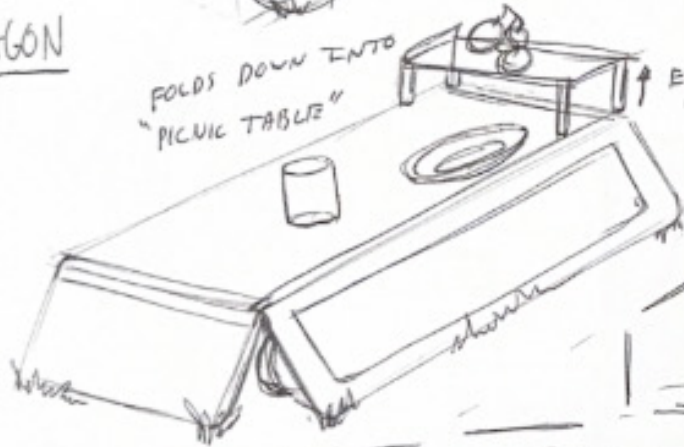
- INFLATED RUBBER?
- HOLO PLASTIC



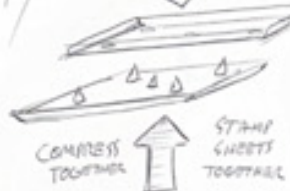
# CONCEPT IDEATION



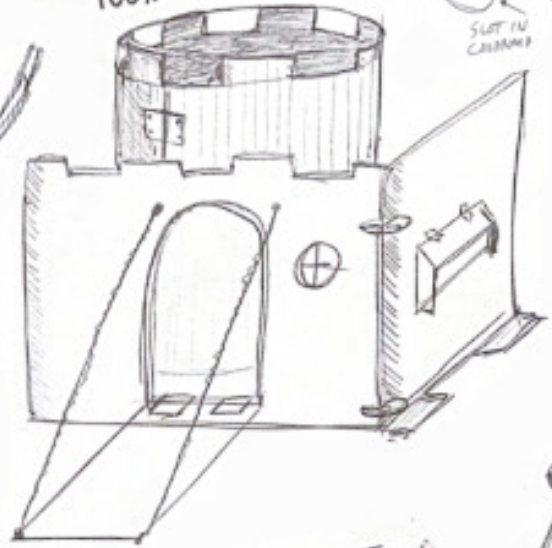
FOLDS DOWN INTO "PICNIC TABLE"



PUZZLE SHEETS TOGETHER



95% WASTE  
100% FUNNUNN??

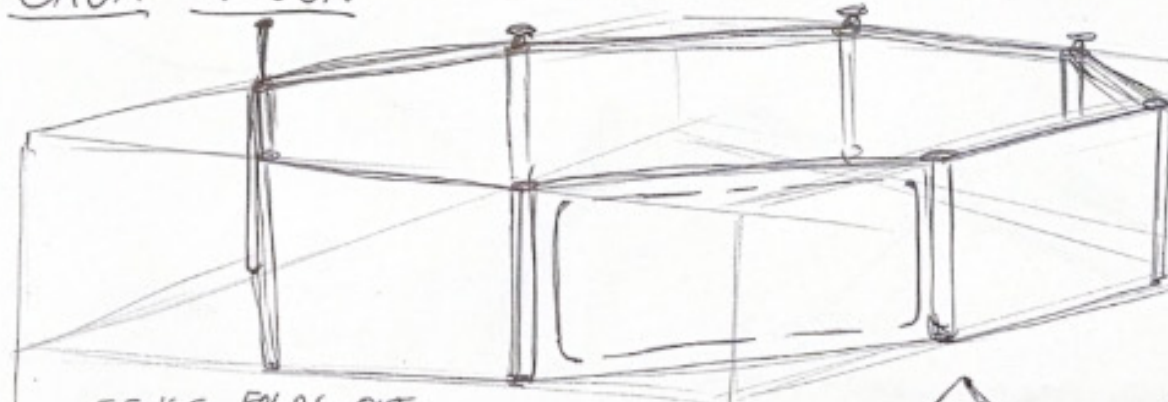


COLLAPSABLE ACCORDIAN ZIG-ZAG FOLDING WALLS

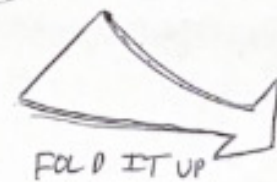


GAGA WAGON

ENTRY PASS IN STAKE TO SECURE WALLS



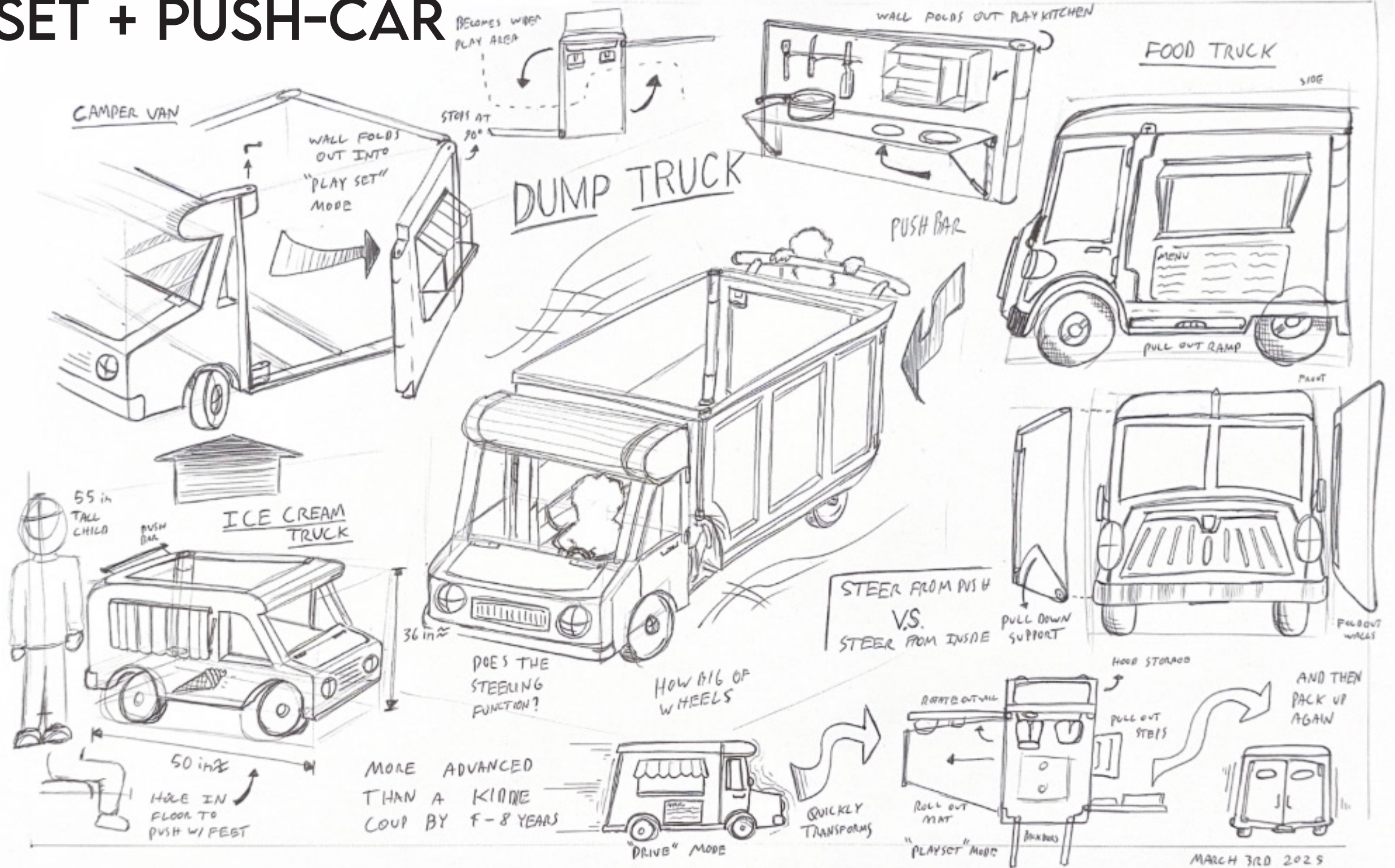
FENCE FOLDS OUT INTO "GAGA" BALL ALENA



PULL ALONG



# PLAY-SET + PUSH-CAR



MARCH 3RD 2025  
JUDITH HANSEN

# USER CHECK IN



**BLAKELY**

Middle Child (11)

'The cart one would be fun but only with 6 people at the most of us but 4 would be best and 2 is the smallest amount"

"I really want to paint it myself or make it how I want it"

'I like the gaga ball one that all I play at recess"

'we have badminton stuff but never play with it because the net is annoying to put up to play"

**GREY**

Youngest (9)



'The icecream truck is ok and the trash truck is good too but can I make it a type of car I want by myself?"

"I like building and big toys I can make fort kind of things with"

**DIEGO**

Only (6)

'If I took this to a park I think other kids might come and try to play with it too which would be annoying to me"

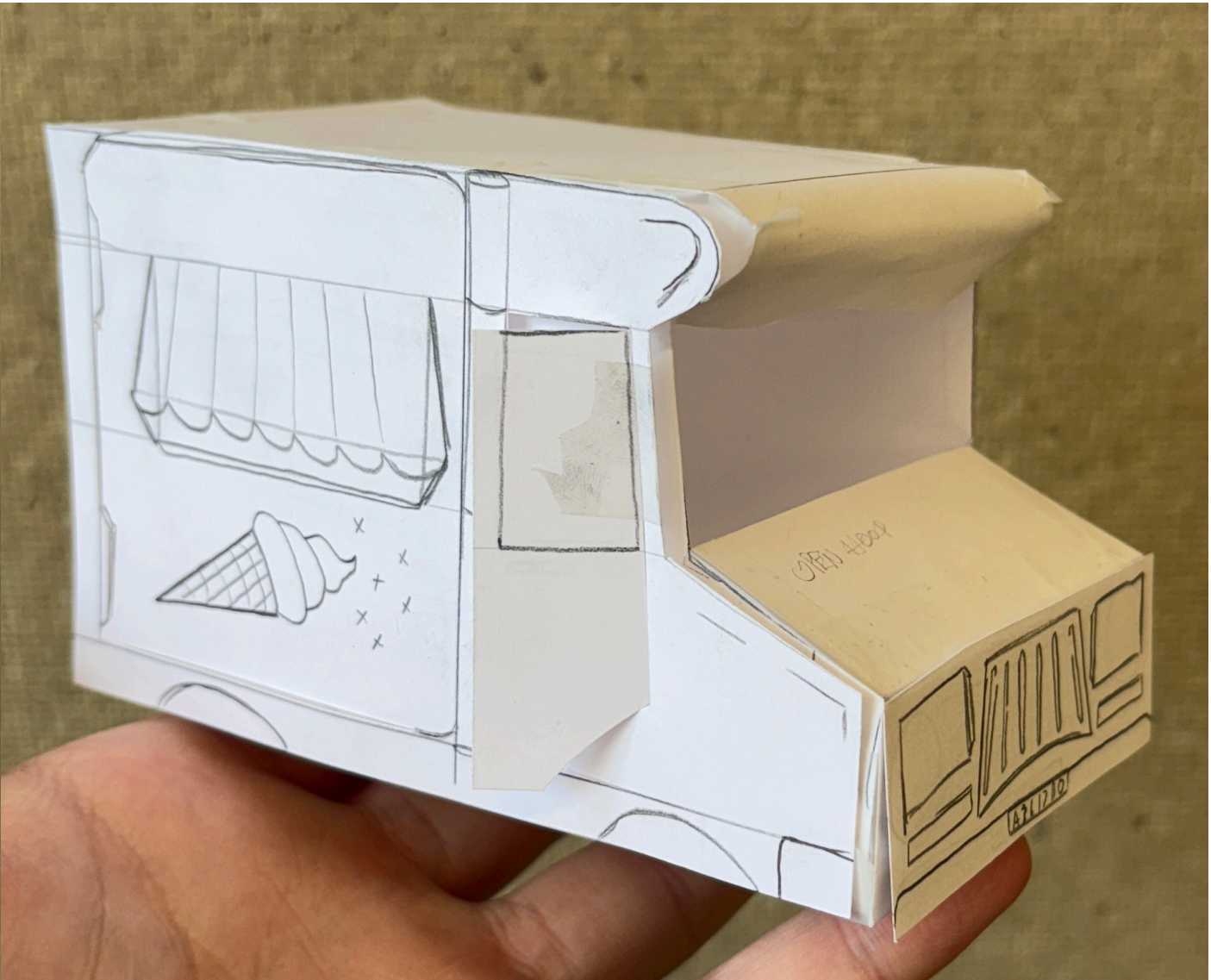
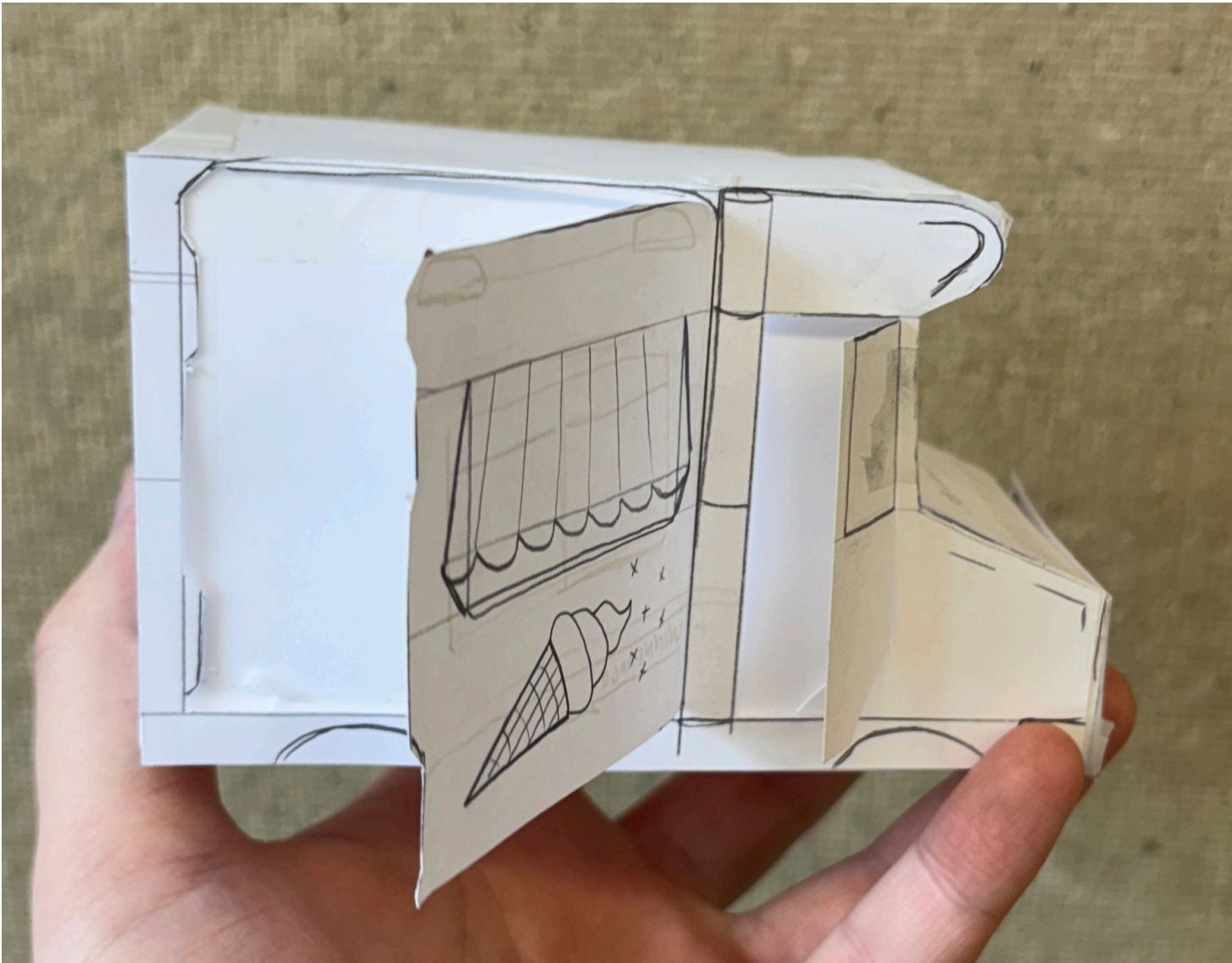
'I like it outside but also it would be good in my room too"

**BEAUX**

Youngest (5)



# MOCK-UP



Testing paths of clearnace for swing doors and panels

How large doo wheel need to be to stay safe but be easy to roll?

What theme connects with age group best?

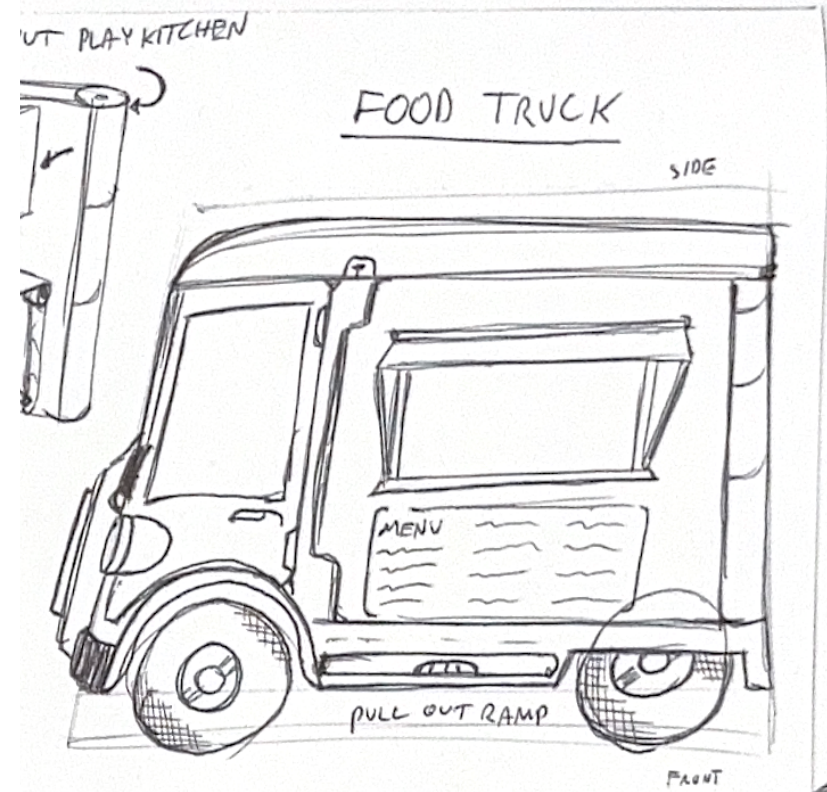
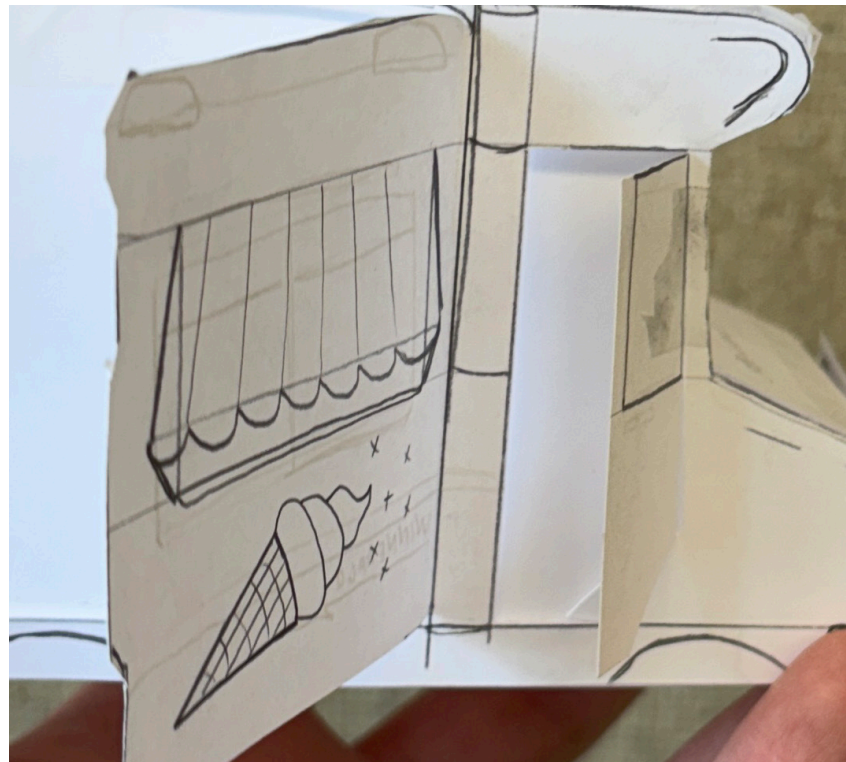
Does it need the "RV bump"

Should it have permanat roof, removable roof, or no roof at all

# FAILURE AND RESOLUTION

Issue: The Front door is either too small to squeeze in or takes up too much space on the sidewall

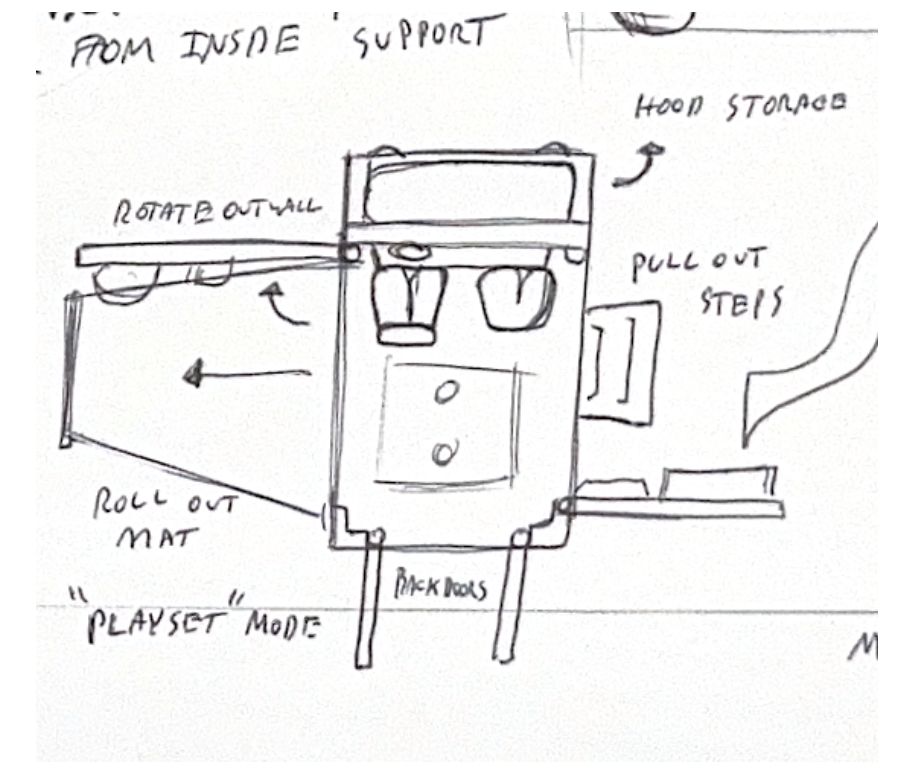
Solution: Remove Front Door using just back door and sides to get



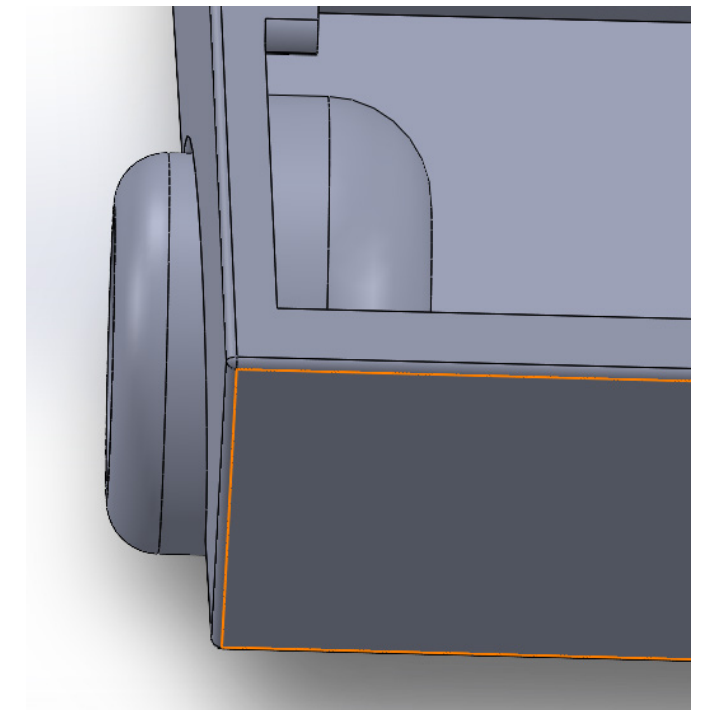
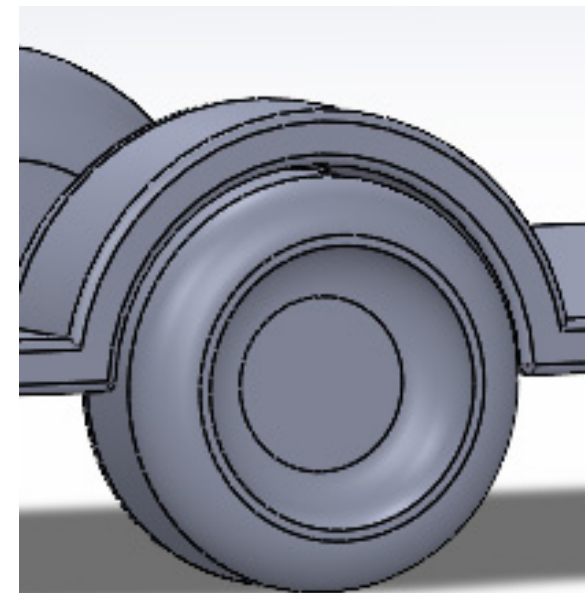
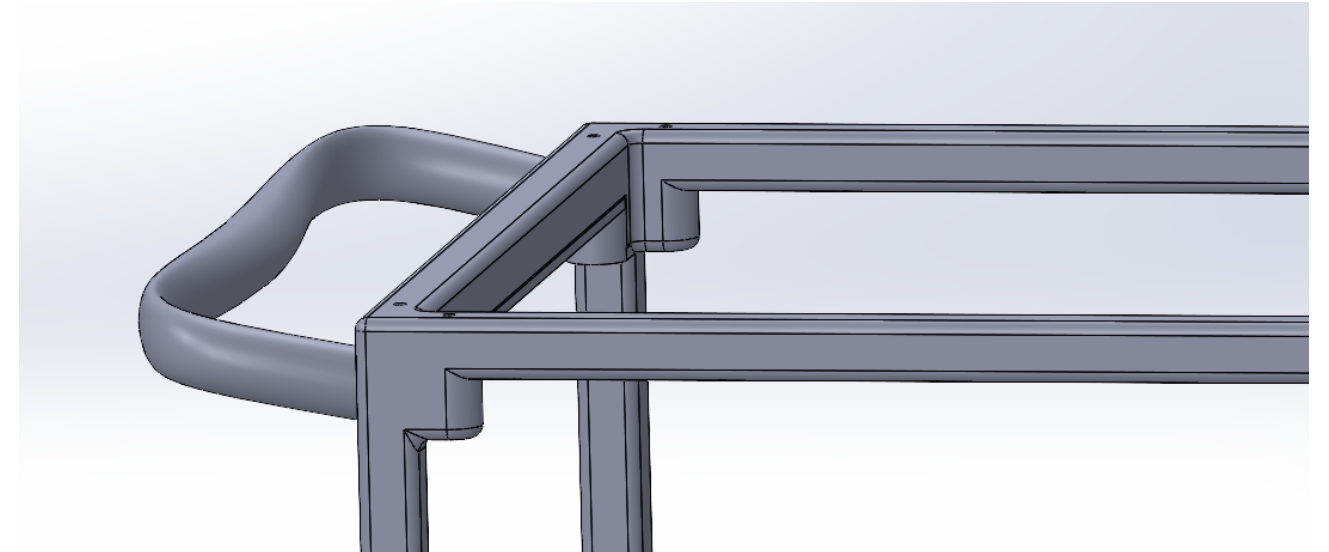
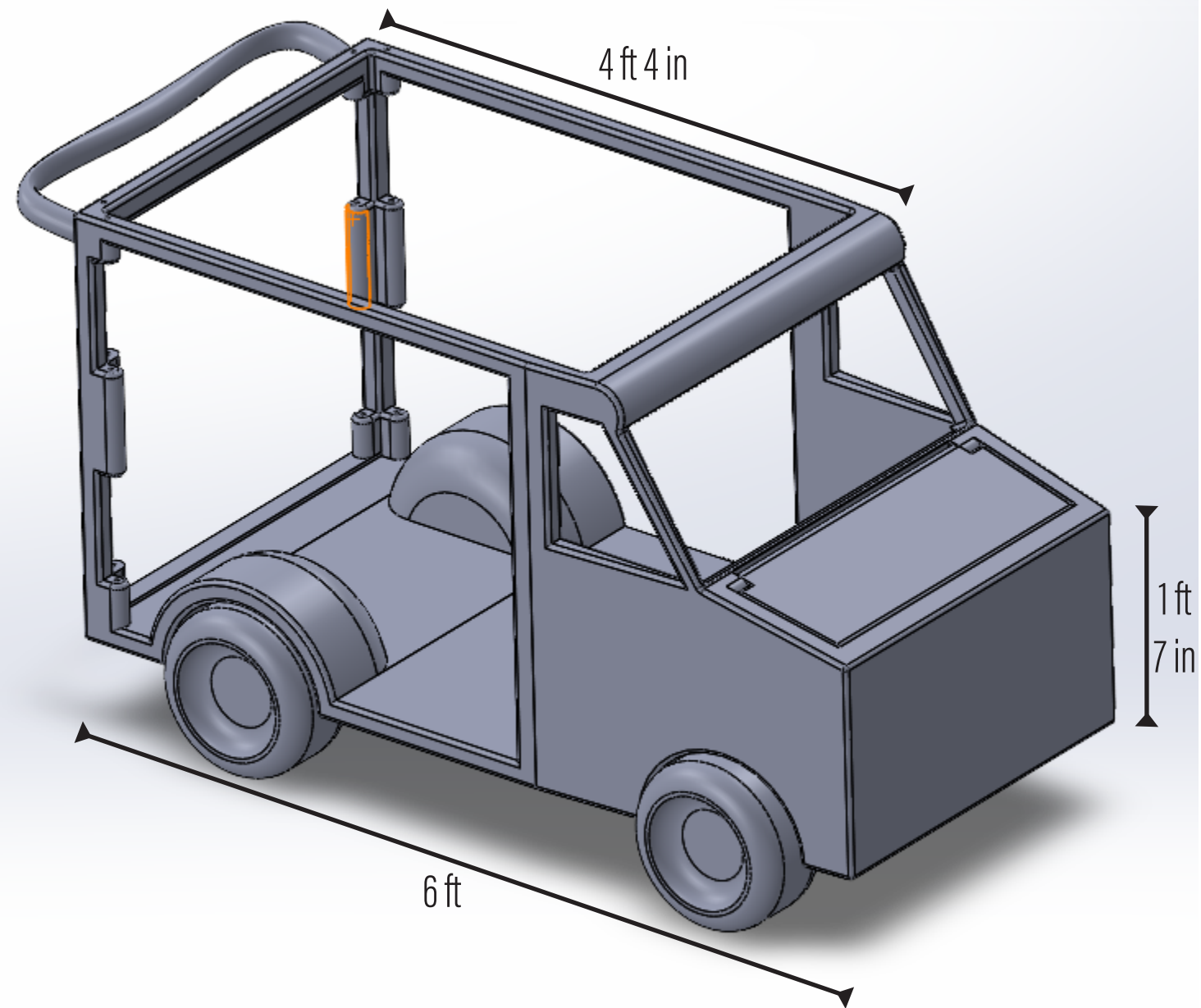
Issue: What size of wheel will roll without being dangerous?

Solution: 40 CM Diameter wheels are wide enough to roll over rough terrain without being too big to roll away

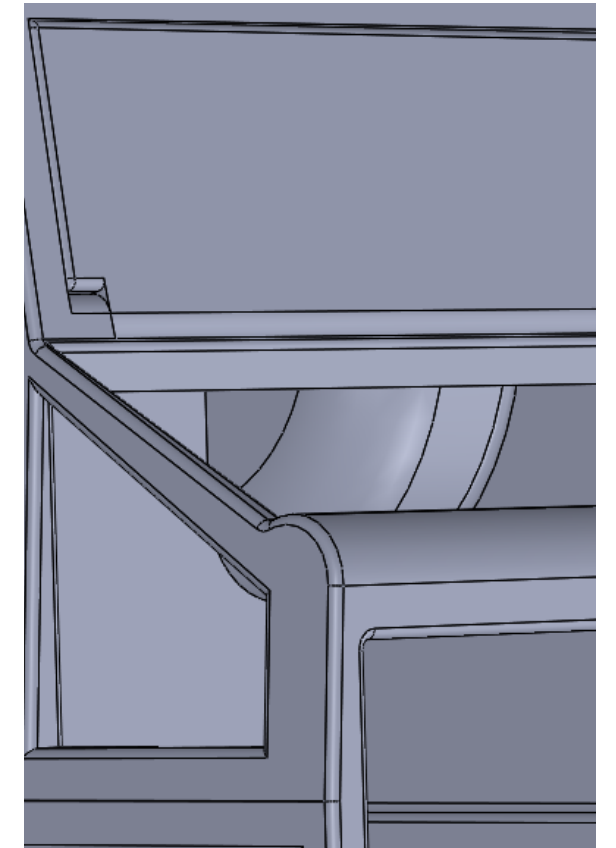
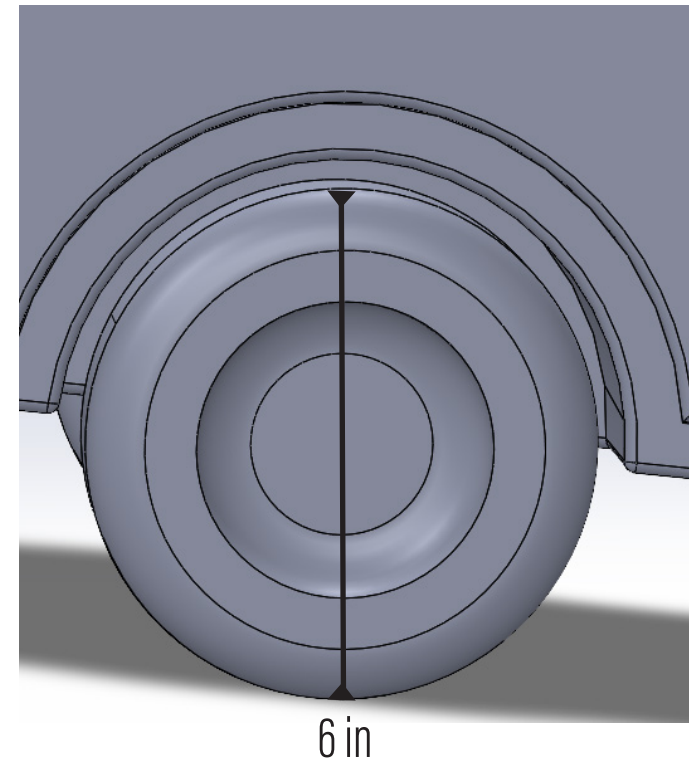
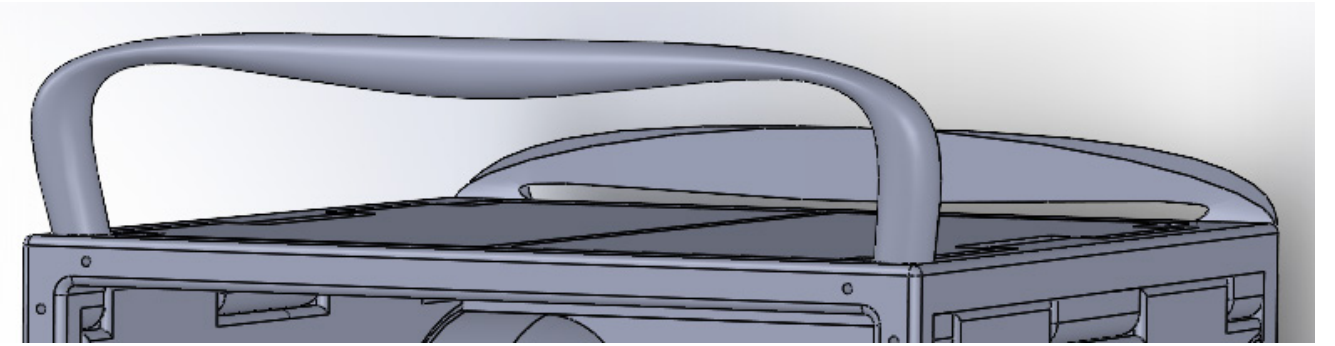
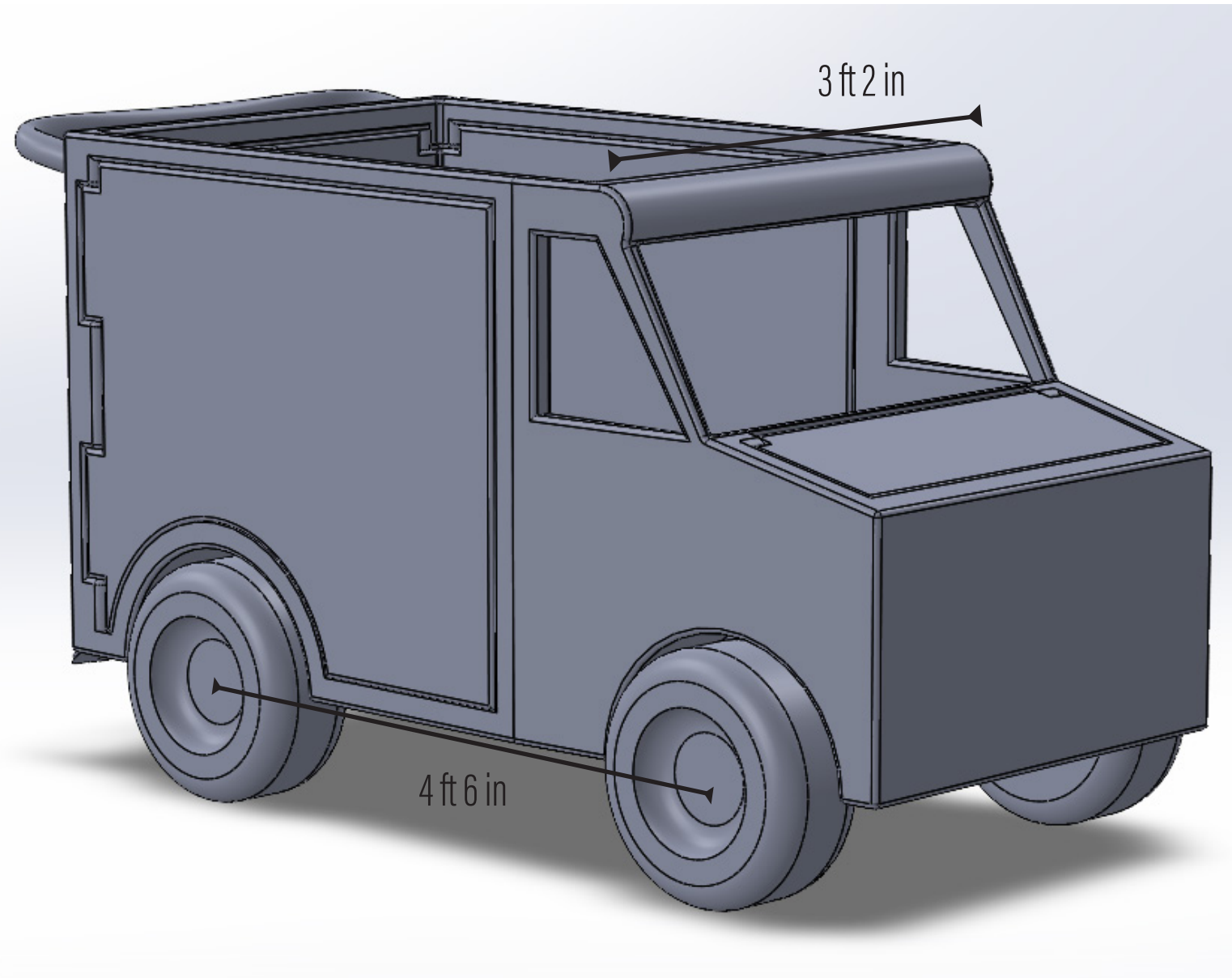
Issue: What should the roof consist of?  
Solution: Leaving the roof open stops kids from bumping their head and lets taller kids use the wagon interior comfortably



# CAD DEVELOPMENT



# CAD DEVELOPMENT CONT





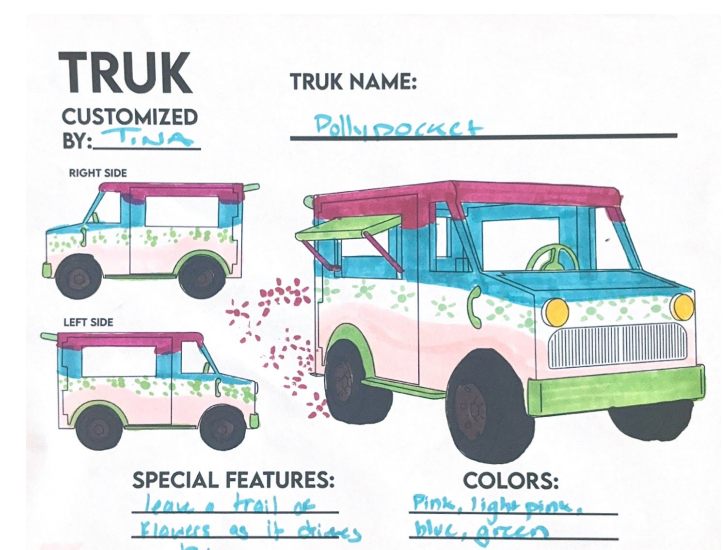
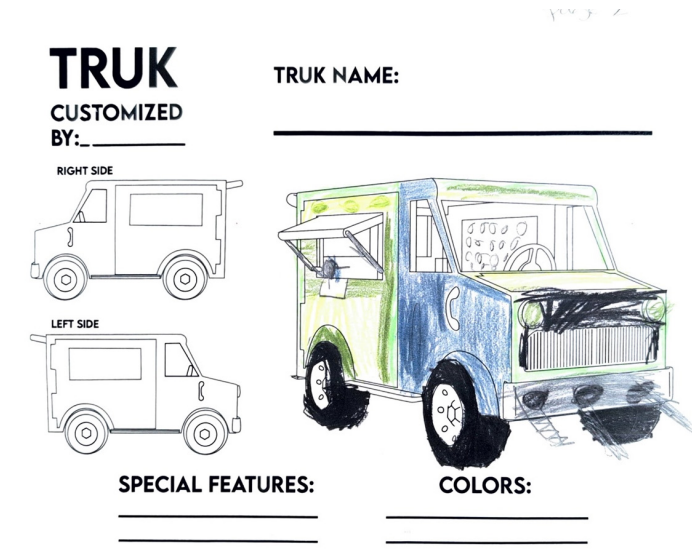
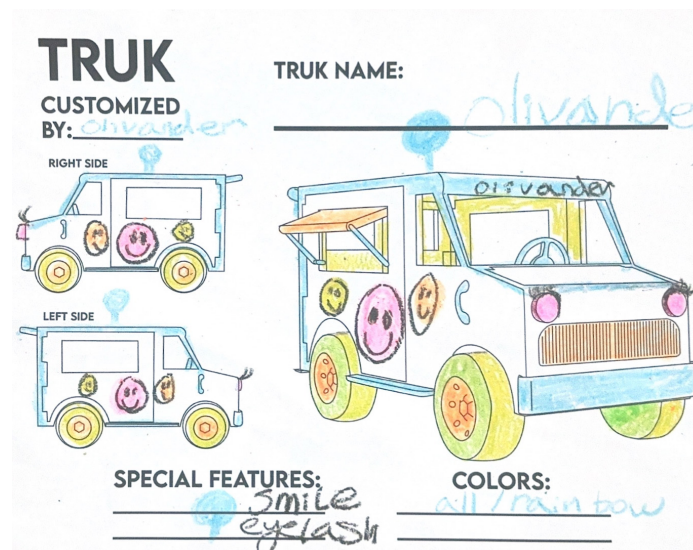
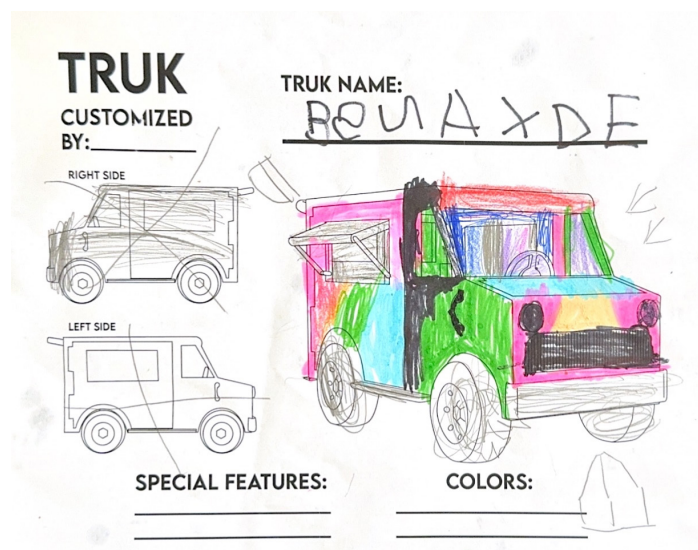
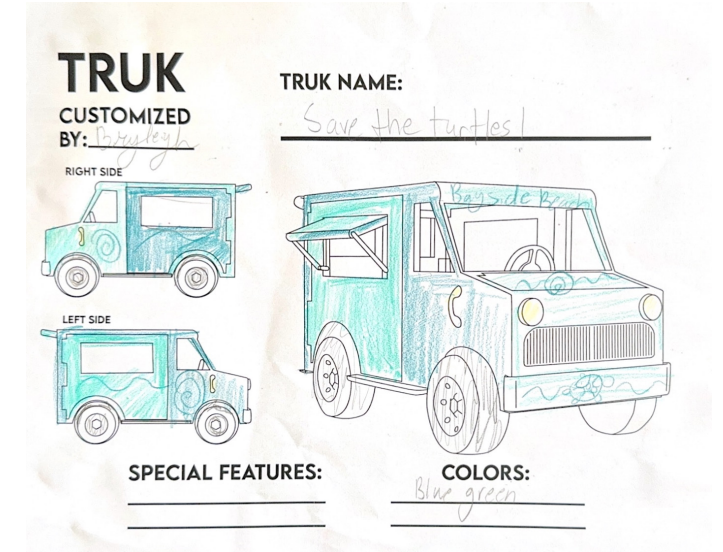
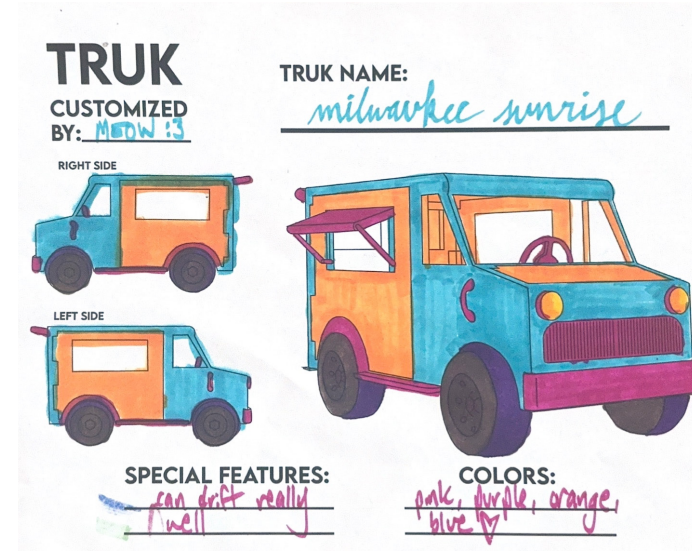
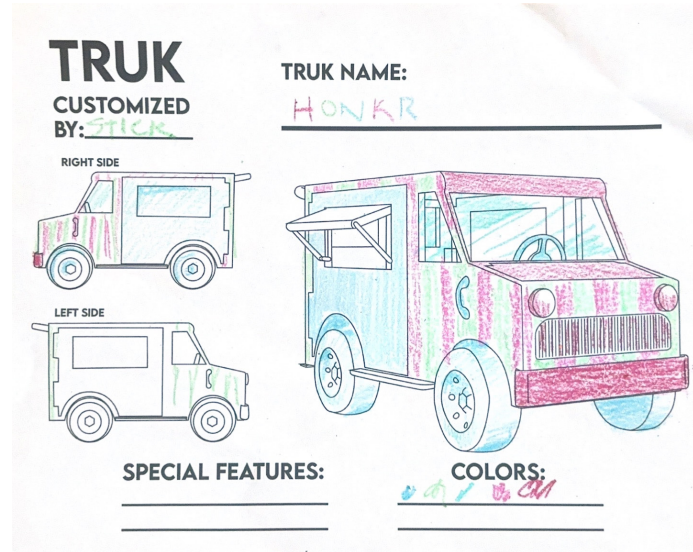
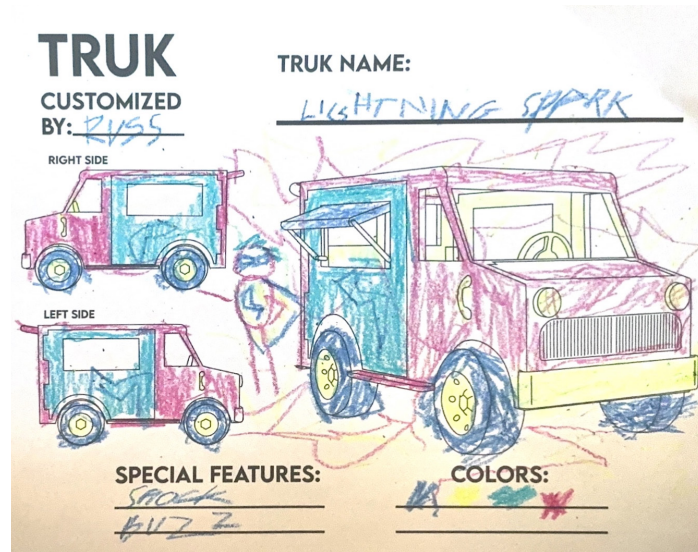
**TRUK**

*CUSTOMIZABLE MOBILE PLAYSET*

# MEETING USER REQUESTS

How can very different requests from multiple users all be addressed?

Make customization a feature:  
Use childrens coloring sheet as basis to make a custom wrap for unique a TRUK



# USER CUSTOMIZATION 1



## BLAKELY

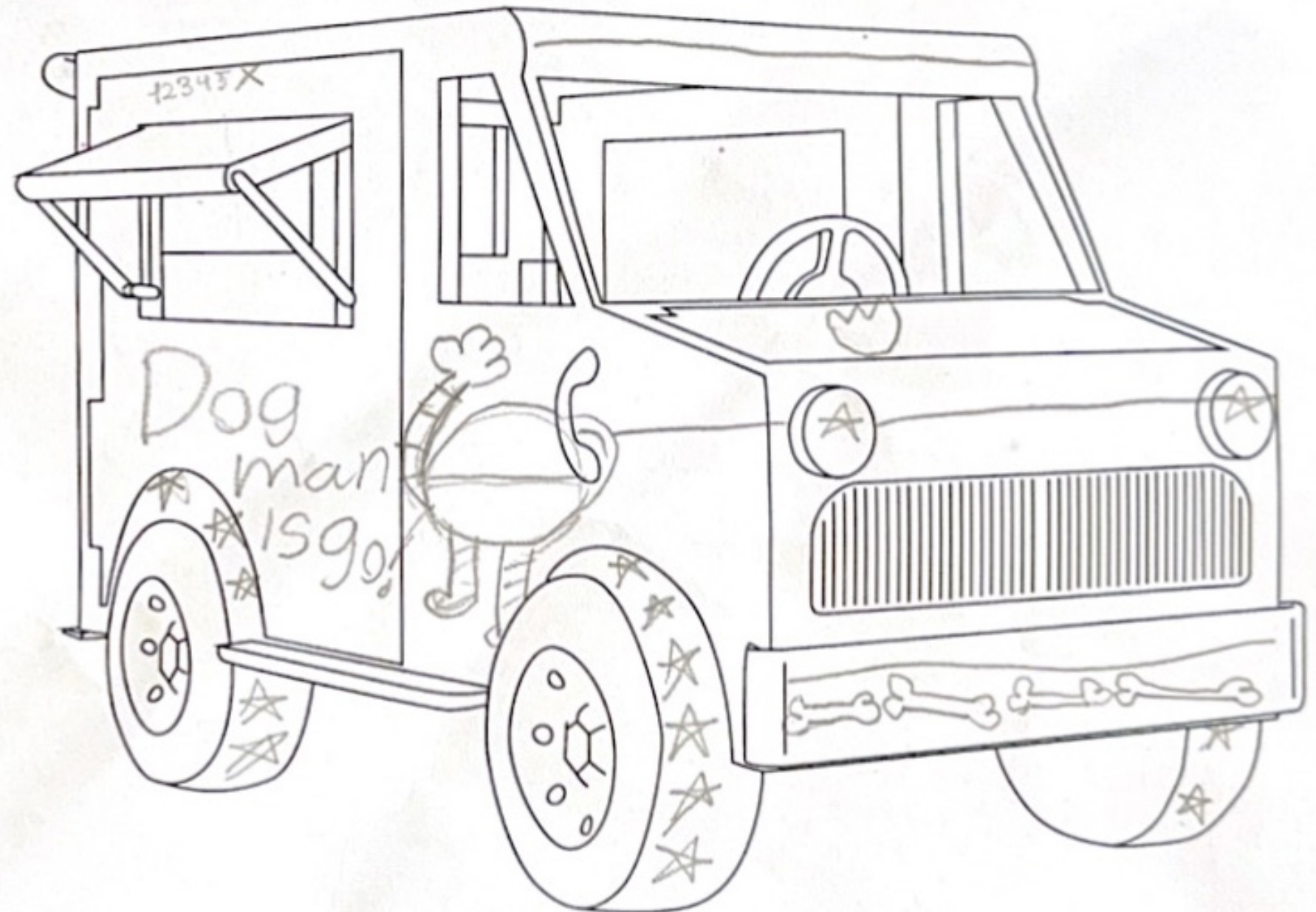
Middle Child (11)

"I kinda want to do the ice cream truck but maybe more food than icecream would be fun to play with cause I could use my toy foods"

"My little sister would probably draw on it or put stickers on it which is guess is fine if I can take those off of it too"

TRUK NAME:

Dog man truck



# USER CUSTOMIZATION 1

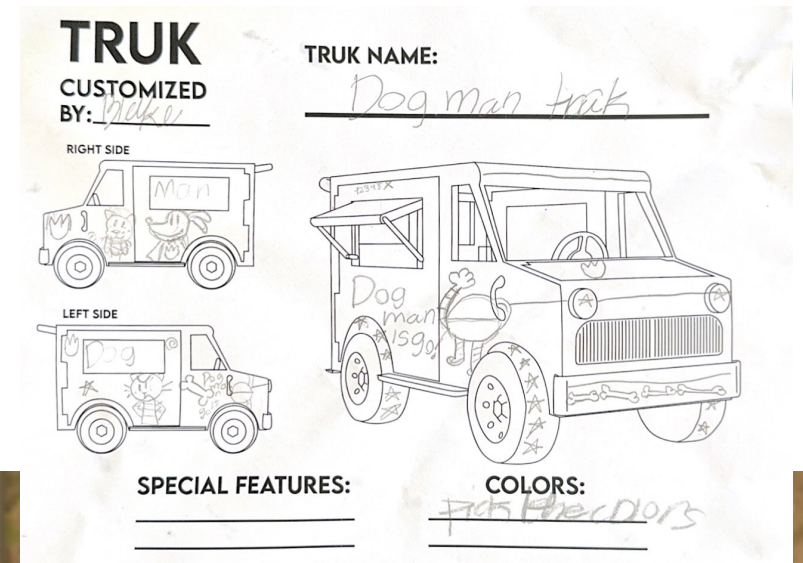


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# USER CUSTOMIZATION 2



**GREY**

Youngest (9)

"I kind of want to make it look like a construction kinda thing"

"What if it had a plow on the front?"

"Wood parts look cool I want to paint them but wish I could erase it too"

TRUK NAME:

Water whacker



# USER CUSTOMIZATION 2



## GREY

Youngest (9)

"I want to draw a water blaster on the side like I can lean out the window and shoot a water gun"

"What if it had a ram plow thing on the front?"

"I want to paint them but wish I could erase it too or like wash it off like chalk"

**TRUK**  
CUSTOMIZED  
BY: GREY

TRUK NAME:

Water Wacker

RIGHT SIDE



LEFT SIDE



SPECIAL FEATURES:

Water Gun  
grate that you move to  
work

COLORS:

black green  
blue



# FUTURE DEVELOPMENT

DRY ERASE BOARD  
SURFACE?

CHALKBOARD PAINT COAT?



HUB CAP ATTACHMENT  
POINTS?

CARDBOARD PANEL  
ATTACHMENT POINTS?