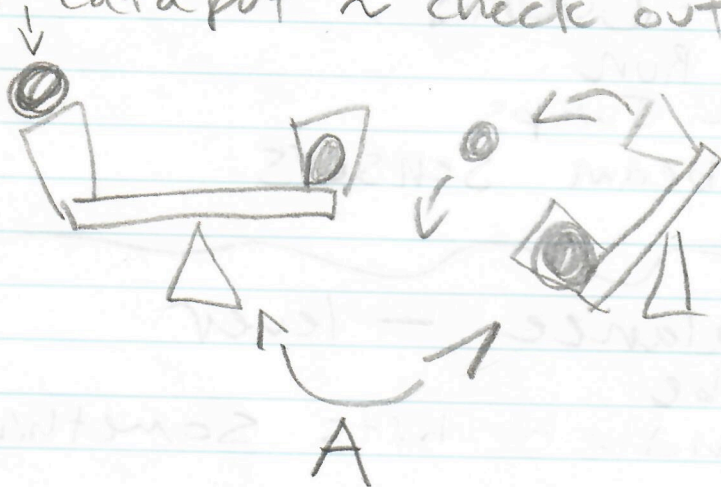


Davian  
10/19/2023

# Brainstorming

- ★ Dominoes
- ★ Latch
- ★ Motor - planet spinning
- ★ Chemical ~ baking soda + vinegar
- ★ Marbles
- ★ Kicker ~ machine
- ★ Tubes ~ wormhole
- ★ Syringes - hydraulics
- ★ Spring loaded
- ★ Catapult ~ check out drawing "A"



- ★ Play music
- ★ Unlock door
- ★ Spaceship prop
- ★ Light bulb goes on
- ★ Perpetual motion machine
- ★ Super nova
- ★ Servo, micro controller
- ★ Servo drops something
- ★ Bolts - fasteners / nails
- ★ Micro Switch - trigger
- ★ Underwater transport - boat
- ★ Cup stack
- ★ 3D print hinges - dominoes

10/19/23  
Darian

# MORE Brainstorming con

- ★ helium balloon
- ★ Gearing down motors
- ★ adapt legos
- ★ planet steps
- ★ Planet-based
- ★ Mentos + Pop
- ★ light bulb - sun
- ★ marble - dominoes
- ★ parachute
- ★ Turning round - drops marbles
- ★ Popcorn - BOOM!
- ★ Marble Run
- ★ Marble ~ Jumps
- ★ Laser beam sensors

- 
- |                                 |                 |
|---------------------------------|-----------------|
| 1 Math balance — lever          |                 |
| 2 roll — tube                   |                 |
| 3 drop spindle ~ hits something |                 |
| 4 Cans                          |                 |
| 5 Wire                          | 18 Paintbrush   |
| 6 Tape                          | 19 Rubber       |
| 7 Empty spool                   | 20 Pencils      |
| 8 Dish                          | 21 paint        |
| 9 pop-it                        | 22 wood (scrap) |
| 10 gears                        | 23 Scissors     |
| 11 bells                        | 24 glue         |
| 12 legos                        |                 |
| 13 Cups                         |                 |
| 14 Marble Run                   |                 |
| 15 blocks                       |                 |
| 16 Tape measure                 |                 |
| 17 Nails                        |                 |



10/19/23 MORE

## Daivian Brainstorming

- 25 Robotic Puppy
- 26 milk caps
- 27 ball - or bouncy
- 28 magnets
- 29 roller blades
- 30 marbles
- 31 Tape measure
- 32 bike bell
- 33 Doll toys

\* hard ware cloth ~ around balloon,  
needle pops balloon - big noise  
w/ glitter

\* hit something w/ pool ball

\* Magnetic lever

\* Electro magnet

\* Use cans to catch balls

## Favorite Ideas to work on...

Danen - Pop balloon

Amalia - Bear swinging

Ashely - Music

Daivian - Dominoes - space outfit

Jeron - funnel, ball

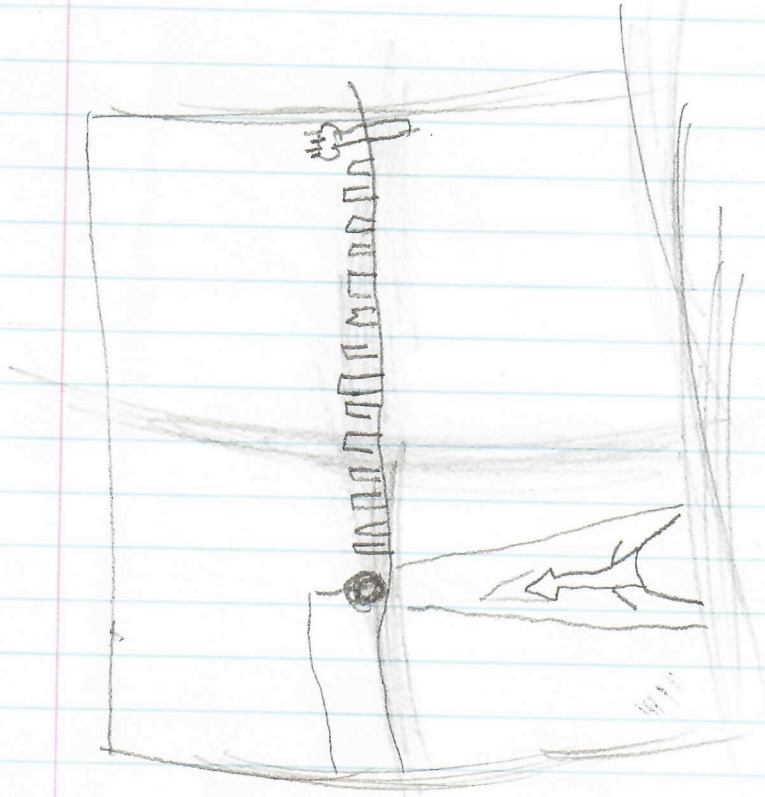
Elliott - catapult

Dominic - Ball swinging

Emma - Baking Soda & Vinegar

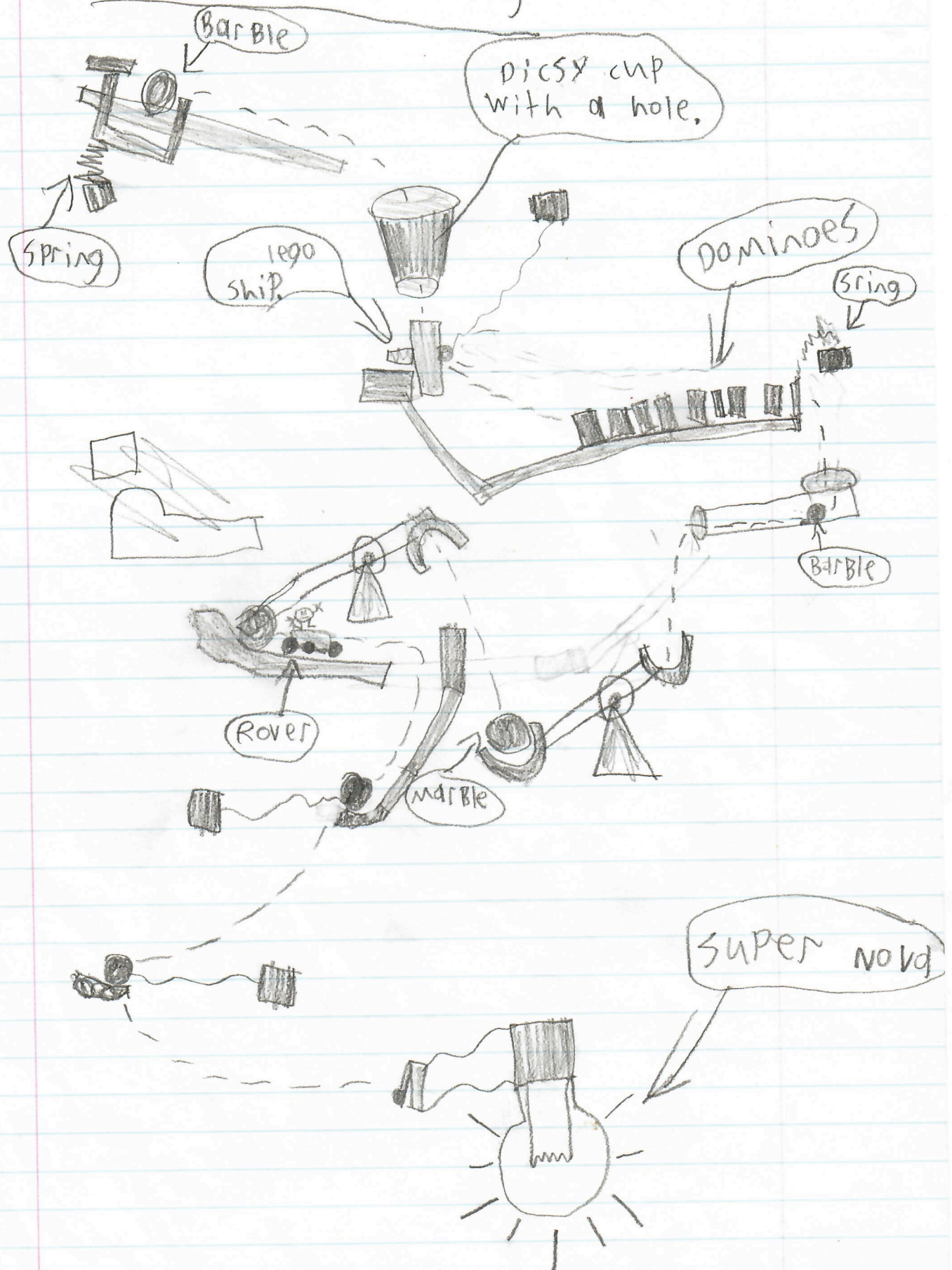
Ideas

1-19-2023





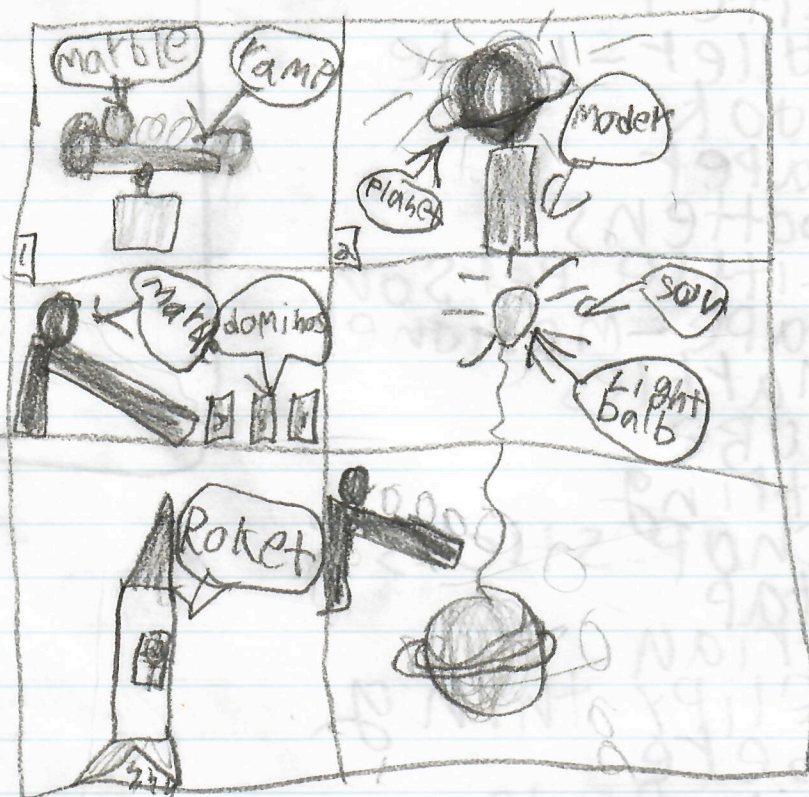
# Brainstorming



# Ideas

Date: 11/19/23

name: emma



## more Ideas

- 1 ✖ feather
- 2 ✖ bead
- 3 ✖ stick
- 4 ✖ ball
- 5 ✖ pencils
- 6 ✖ math balls
- 7 ✖ magnets
- 8 ✖ can
- 9 ✖ Electric puppy
- 10 ✖ Pop it
- 11 ✖ blocks
- 12 ✖ bell
- 13 ✖ Christmas ornament
- 14 ✖ cap to battle
- 15 ✖ cap of bubble



# More Ideas

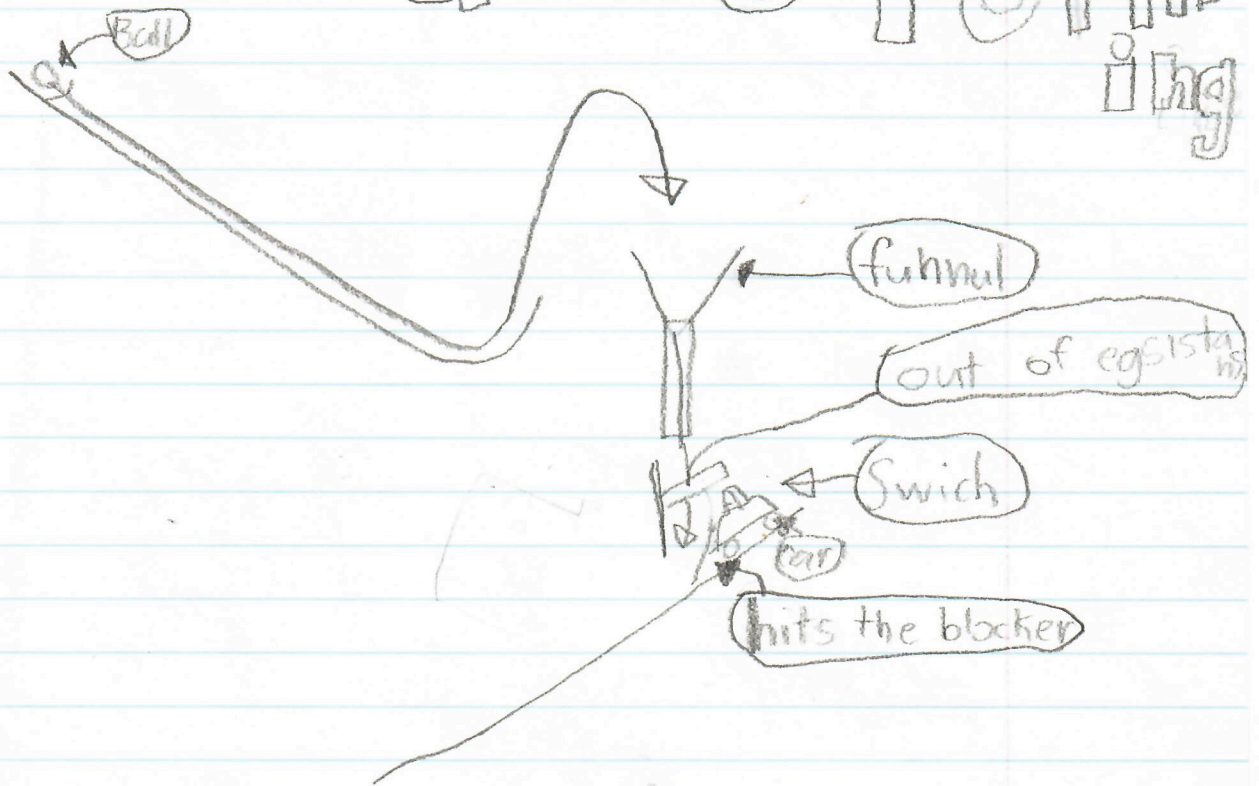
## More Ideas

- 16 ✱ Paint-brush
- 17 ✱ Glitter
- 18 ✱ Roller-blade
- 19 ✱ book
- 20 ✱ Paper
- 21 ✱ bottoms
- 22 ✱ Little Person
- 23 ✱ tape-measure
- 24 ✱ Marbles
- 25 ✱ tube
- 26 ✱ string
- 27 ✱ chop sticks
- 28 ✱ tap
- 29 ✱ trian
- 30 ✱ flip thing
- 31 ✱ Gere
- 32 ✱ tin-foule
- 33 ✱ card board
- 34 ✱ Marbles run
- 35 ✱ box
- 36 ✱ bulloon
- 37 ✱ ramp
- 38 ✱ Model and Planet
- 39 ✱ dome house
- 40 ✱ Zipper
- 41 ✱ bottle
- 42 ✱ stamp
- 43 ✱ nose tap
- 44 ✱ cup
- 45 ✱ wire
- 46 ✱ Puff-ball
- 47 ✱ Fabric
- 48 ✱ sizers

Jeron

1/19/23

# Brainstorming










# IDEAS

1-18-2023

Amalia Peterson

- unlock door 
- Turn on light 
- Fan 
- Cup stack 
- Pop and Mentos 

# 209023 Assignments

★ All write 3 sentences about what we've done today.

★ All collect materials

★ Davian ~ research painting

Emma + Davian ~ base coat

Ashely ~ star cutouts

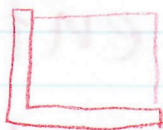
Davian ~ angle iron + car testing



2.9.23

# Base

Top view



Side



Front



(L-shaped)

- ① We all gathered supplies for the Board.
- ② We all got a turn cutting and marking.
- ③ We finished the main part of the Board and we assigned jobs for every-one to work on in the meantime.

-Dominic K.

# EMMAK Volcano

baking soda balls

## Equipment

1. baking soda
2. 2 big spoons
3. Small Pot

what I tried

1. I tried coloring it with a marker.
2. I tried coloring it with food coloring. It worked!
3. I figured out that why it wasn't going over the jar is because I had to measure it.

## Steps

1. Boil the water in the small pot.
2. When done set it aside for one minute.
3. Take one of the spoons and fill it with baking soda.
4. Take the other spoon and fill it with boiling water.
5. Pour the water in the spoon into the other spoon and shape it into a ball.
6. Set it aside to dry.



Danen 1-16-2023

We each were asked to find materials for our engineering project. We came up with ideas, and drew up a plan. We have watched a couple videos on simple machines to help inspire us.

2-15-2023

We were able to  
build most of the  
frame. We found many  
parts around the house.  
We also had fun learning  
how to use a jig saw.

The eternal God is your refuge,  
and underneath are the everlasting arms.  
~ Deuteronomy 33:27



We gathered materials.

We built our base.

We figured out jobs.

I

gathered the materials  
for the project. We watched  
a video of a chain reaction.  
~~And~~ We put the pieces  
of it together.

### T-SHIRT SIZES

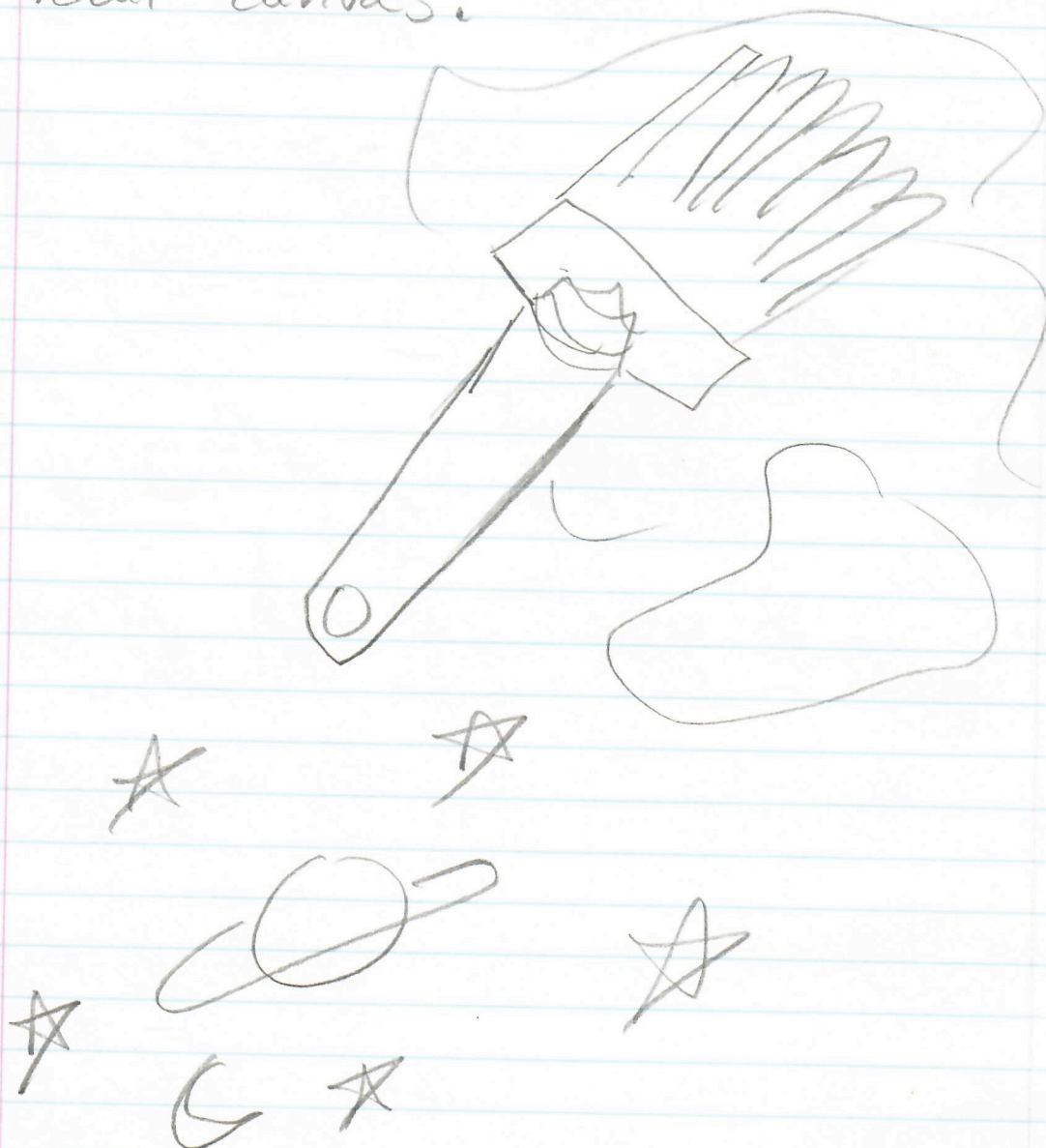
JARON	YOUTH L
DANEN	YOUTH M
ASHLEY	ADULT XS
AMALIA	ADULT XS
DAVIDAN	YOUTH M
Dom	YOUTH M
Emm	YOUTH M



Davian Koren

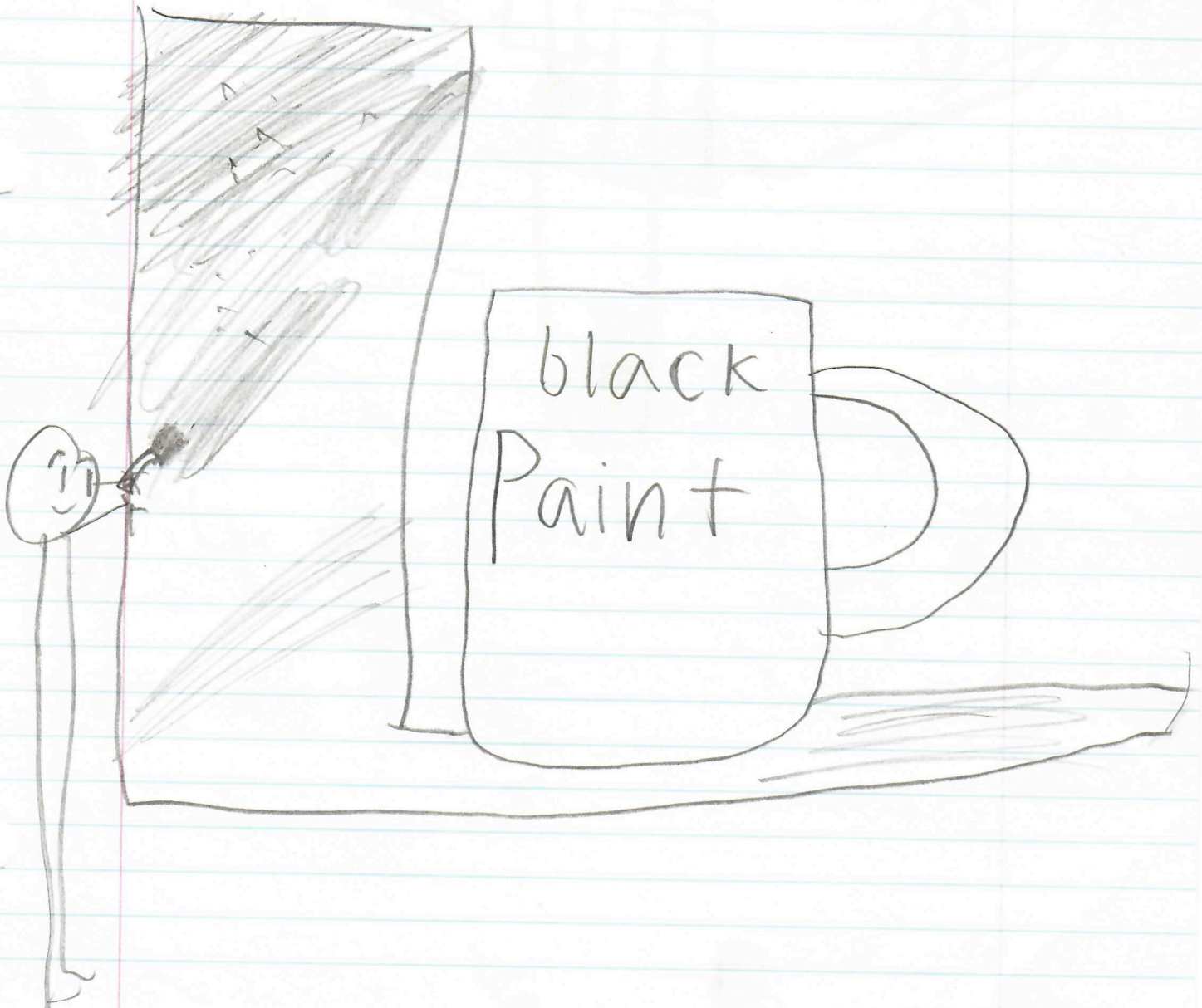
3.10.2023

Last time we learned about painting, mostly. I'm really into art, so I had a lot of fun painting galaxies and sother things space-related onto our base. Before we painted, me + my sister Emma helped to prime the board so that it would make an ideal canvas.



2023  
EMMA KOKEN

Last time we learned  
how to paint. we painted  
planets and stars and  
space ~~people~~ people. It was  
fun. I like painting!  
I helped prim the board.





Davide Koren

3.2.23

This last meetup we started putting things on the board and beginning to map out what goes where.

Also, we were brainstorming for the chemical step, and calculating the challenges it will create.

3/2/2023

This time we split up into two groups. The boys worked on the car ramp to pop the balloon. The girls worked on a way to start the radio. Once we figured out a situation, we made a plan for next week.

Danen

3/2/2023

For our fourth class we split up into two groups. us girls worked on the rocket and the boys worked on a balloon contraption. Ashly and I also worked on the radio.

Amalia

3/2/23

②

We made step one, turn on the radio.

③

We worked on decorations for our rocket.

④

I'm how to build a radio and then built one for our machine.

①

2/23/23

We painted the base black.

②

We painted on decorations on our base.

③

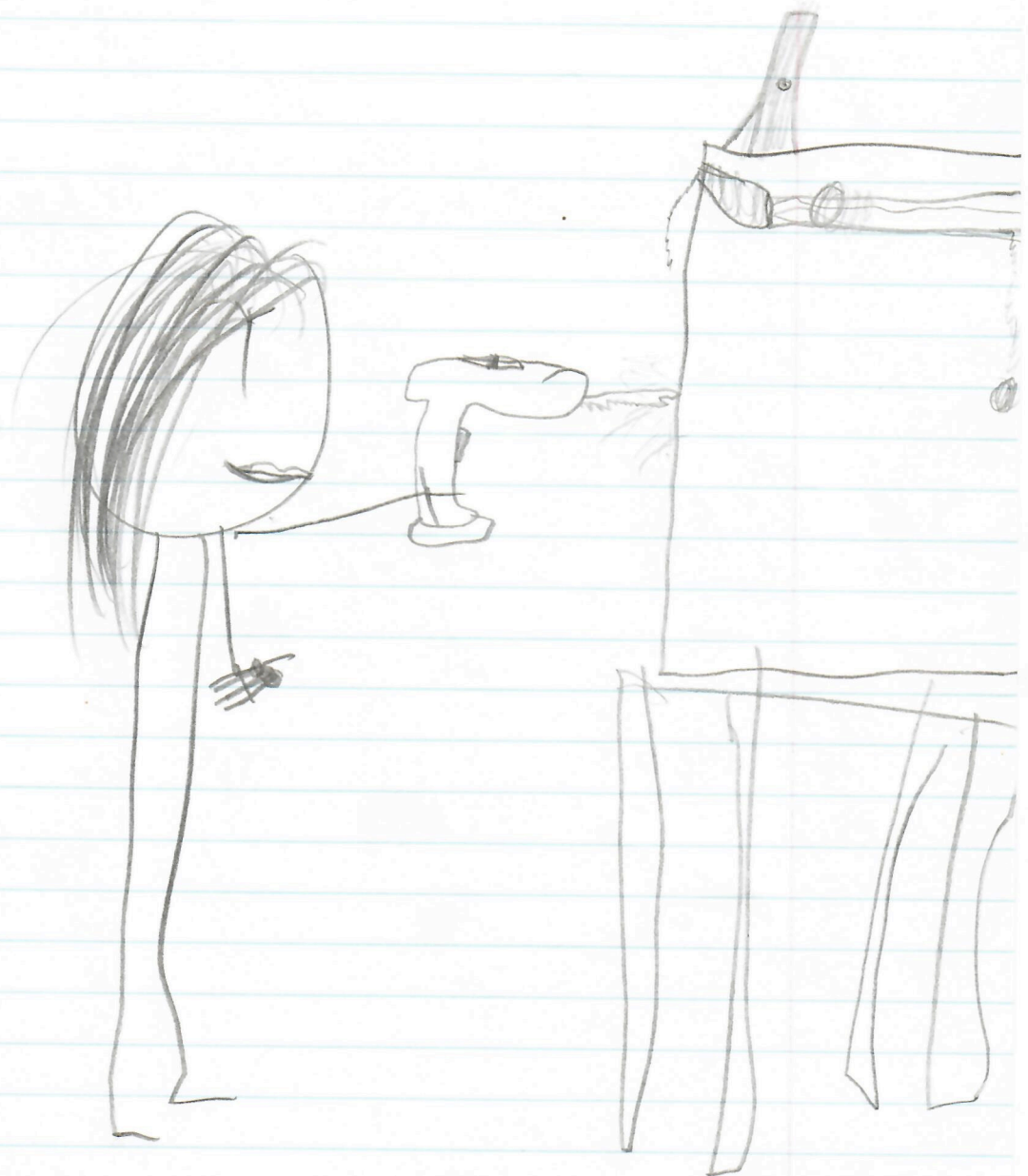
We made wings for our rocket.



31812023

# Emma Koken

this time we started to put things on the board. I painted a little bit. we mapped out what went where.



## RECYCLED/NOT RECYCLED MATERIALS

### Green ~ Recycled

Board  
Can  
Pulley  
Car  
Washers  
Balls  
Ramps  
Ball-Catching Containers  
Wooden Pool Ball Ramp  
Balloon Shield/Cage  
String  
Weight (Step 2)  
Dominoes

### Red ~ Not Recycled

Lever  
Balloon  
Paint  
Numbered Cards  
Radio  
Hinges

## Our Biggest Challenge(s)

The washer contraption, and the balloon step. It took many tries to perfect the use of these materials. It probably took around 20 trials to make these steps work properly. The washers kept slipping and triggering prematurely, and the balloon wouldn't pop, and if it did, it would be on the shield, due to the wires poking out from the edges of it. It was annoying at times, but it was also fun to try new things and learn about the mechanics of our project.

## Our Easiest Step

The dominoes were probably one of the easiest things, because Davian (who painted them) was already educated in art, and they were easy to set up, as we already had hinges on hand for them, and the wood was recycled, it was left over from other previous projects.

## Blooper Steps

### The Chemical Reaction Step

Amalia, Emma, and Ashley worked hard, trying to establish the chemical reaction step in the project, however, they decided that, due to cleanup, and the fact that it was very time-



consuming, the step would be excluded from the main board.

### **The Track**

We also tried to build a track for a car, the idea was that it would run along the top of the main board, but it fell through, because the car would fall off, and we couldn't drill any holes through the materials we were using due to the fact that the owner didn't want their toys being ruined. The pin that would release the car always lifted off before its time, and it wouldn't trigger the next step (the washers) the way we wanted it to.

### **Timing**

We first started to work on our project on January 19th, and we had our first complete run-through on March 12th. Our first run-through was very underwhelming, because we had many misfires, and it made our first complete run-through very special to us. Once our last step was a success, everyone yelled and cheered!

It was very exciting, as we have spent over two months and many hours working on developing our project, named "Space Co. Pop", and to see everything work properly gave us much joy. Our machine takes roughly 6 seconds to run.