Brainstorming

- Dominoes
- latch
- Motor - planet spinning
- Chemical ~ baking soda + vinegar
- Marbles
- Kicker ~ machine
- Tubes ~ wormhole
- Syringes ~ hydraulic
- Spring loaded
- catapult ~ check out drawing "A"

- Play Music
- Unlock door
- Spaceship prop
- Light bulb goes on
- Perpetual motion machine
- Super nova
- Servo, microcontroller
- Servo drops something
- Bolts - fasteners / nails
- Micro switch ~ trigger
- Underwater transport ~ boat
- Cup stack
- 3D print hinges ~ dominos
MORE Brainstorming

- 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
6. Tape
7. Empty spool
8. dish
9. pop-it
10. gears
11. bells
12. legos
13. Cups
14. Marble Run
15. blocks
16. Tape measure
17. Nails
18. Paintbrush
19. Rubber
20. Pencils
21. paint
22. wood (scrap)
23. Scissors
24. glue
Brainstorming

25 Robotic puppy
26 Malle caps
27 Ball - or bouncy
28 Magnets
29 Roller blades
30 Marbles
31 Tape measure
32 Bike bell
33 Doll toys

Hardware 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
Davian - Dominoes - Space outfit
Jeron - Funnel ball
Elliott - catapult
Dominic - Ball swinging
Emma - Baking Soda & vinegar
Brainstorming

Barbie

Dizzy cup with a hole.

Spring

LEGO ship

Dominoes

String

Rover

Marble

Super Nov.
Ideas

Date: 11/19/33
Name: Emmie

More Ideas

1. Fether
2. Bead
3. Stick
4. Ball
5. Penciled
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 buble
Jeron 1/19/23

Brainstorming

Ball

Funnul

Out of egosin

Switch

Hits the blocker
IDEAS
Amalia Peterson

- Unlock Door 🔄
- Turn on light 🌟
- Fan 🌬
- Cup stack 🍼
- Pop and Mentos 🍵
209.23 Assignments

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

△ All collect materials

△ Davian ~ research painting
△ Emma ~ Davian ~ base coat
△ Ashley ~ star cutouts
△ Danik ~ angle iron ~ ear testing
Base

Top view | Side | Front

Rocket (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 everyone to work on in the meantime.

-Dominic K.
**Emma K. Volcano**

**Baking Soda Balls**

**Equipment**
1. Baking Soda
2. 2 big spoons
3. Small pot

**What I tried**
1. I tried coloring it with marker, but it did not work.
2. I tried putting in 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. While the done set aside for one minute.
3. Take one of the spoons and fill it with boiling water.
4. Take the other spoon and fill it with baking soda.
5. Pour the water in the spoon into the other spoon and shape it into a ball.
6. Set it aside to dry.
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.
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.

We put the pieces
of it together.
T-SHIRT SIZES

JASON  YOUTH L
DAVEN  YOUTH M
ASHLEY  ADULT XS
AMALIA  ADULT XS
DAVEN  YOUTH M
DOM     YOUTH M
EMM     YOUTH M
Last time we learned about painting, mostly. I'm really into art, so I had a lot of fun painting galaxies and other things space-related onto our base. Before we painted, me and my sister Emma helped to prime the board so that it would make an ideal canvas.
Last time we learned how to paint. We painted planets and stars and space ships! It was fun. I like painting! I helped paint the board.

black paint
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.
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 solution, we made a plan for next week.

Danen

For our fourth class we split up into two groups. Us girls worked on the rocket and the boys worked on a balloon contraption.

Amalia

3/2/23

1. We made step one, turn on the radio.
2. We worked on decorations for our rocket.
3. We painted the base black.
4. We painted on decorations on our base.
5. We made wings for our rockets.
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.

Bloopers 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.