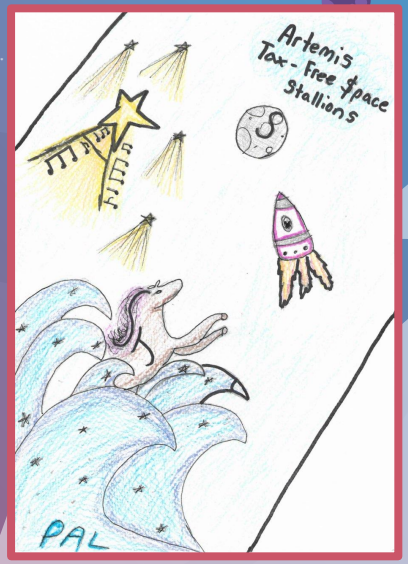
Artemis Tax-Free Space Stallions

NJ009A/B

Ava, Ela, Emma, Jane, Sandhana, & Srejon



MO and Title		Done?	Date Completed	Lead Student	Participating Students
MO-01	Documenting Your Mission	Yes	May 28, 2025	Ava	Sandhana, Ava, Ela, Srejon, Jane, Emma
MO-02	Building a Strong Project Team	Yes	November 13, 2024	Ava	Sandhana, Ava, Ela, Srejon, Jane, Emma
MO-03	Investigating Water on Earth and the Moon	Yes	April 2, 2025	Emma	Sandhana, Ava, Ela, Srejon, Jane, Emma
MO-04	Growing Food on the Moon	Yes	April 30, 2025	Ava	Sandhana, Ava, Ela, Srejon, Jane, Emma
MO-05	ROV-ing Under the Moon	Yes	May 28, 2025	Sandhana	Sandhana, Ava, Ela, Jane, Emma
MO-06	Designing a Human Rated Rocket	Yes	May 25, 2025	Ela	Sandhana, Ava, Ela, Srejon, Jane, Emma
MO-07	Envisioning Your Role	Yes	May 28, 2025	Ava	Sandhana, Ava, Ela, Jane, Emma. Srejon
MO-08a or 08b	Reflecting on and Presenting Your Mission	Yes	May 28, 2025	Sandhana	Sandhana, Ava, Ela, Srejon, Jane, Emma
WILW	Wing it Like Winglee	Yes	May 28, 2025	Jane	Sandhana, Ava, Ela, Srejon, Jane, Emma

~Our Team~

Srejon, supply master

Members of the Stargazers club

Sandhana, author & engineer

Emma, Researcher & Photographer

Ahmet, former agriculturalist & engineer

Jane, team co-pilot & agriculturalist

Ava, Team Leader & engineer

Ela, Artist & Engineer

Ms. Michelle, mission advisor

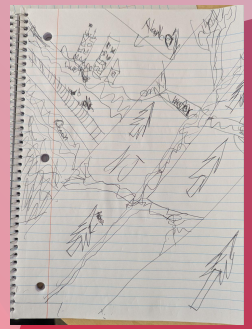
David, high school mission advisor

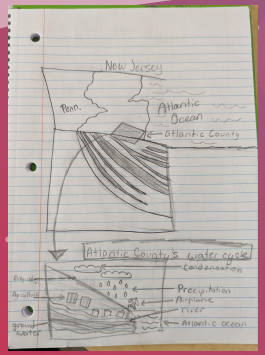
Ms. Lucie, co-mission advisor

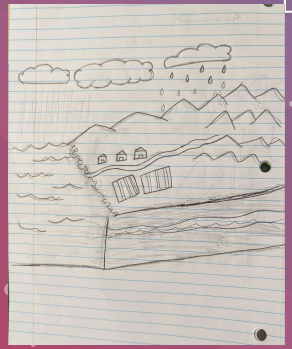
We originally had 7 members which caused us to split into 2 teams. Then one member quit and we are back to one team. However in certain aspects we have kept our division indications: 9a and 9b

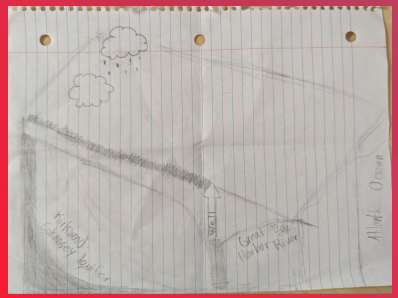
M0-3: Investigating Water on Earth and the Moon

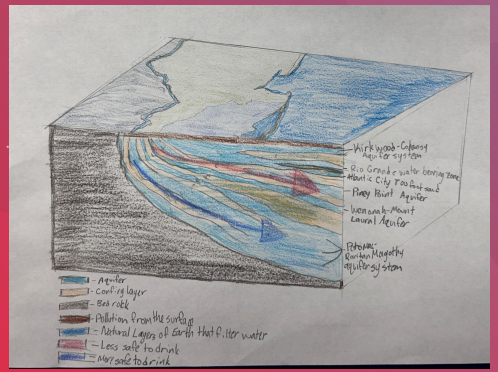
Date Completed	Lead Student	Participating Students
4/2/25	Ava	Sandhana, Ava, Ela, Jane, Srejon, Emma











- The area shown in these drawings is the Atlantic County region, where our team is from. We chose a familiar place to draw and learn more about.
- We've represented the most prominent water source in this region, the Kirkwood-Cohansey Aquifer.

M0-03 Team Photos

Team 9b performs an experiment to see how well different amount of coffee filters filter dirt from water.

Team 9a performs an experiment and observes food coloring in hot water, and how it behaves.

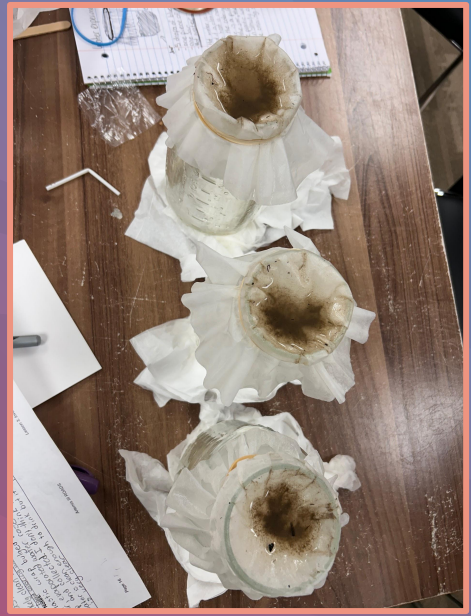
Both teams watch a video and understand the various experiments before conducting them.

This was team 9a's water experiment testing ways to purify water efficiently this is the food coloring in the hot water experiment.

M0-03 More Team Photos!

Here, we are creating dirty water that we will eventually put through our filters to test their effectiveness.

Team 9b creating their water filter.



Team 9a performs an experiment and observes how dirt water filters using different thicknesses in layers of coffee filters.

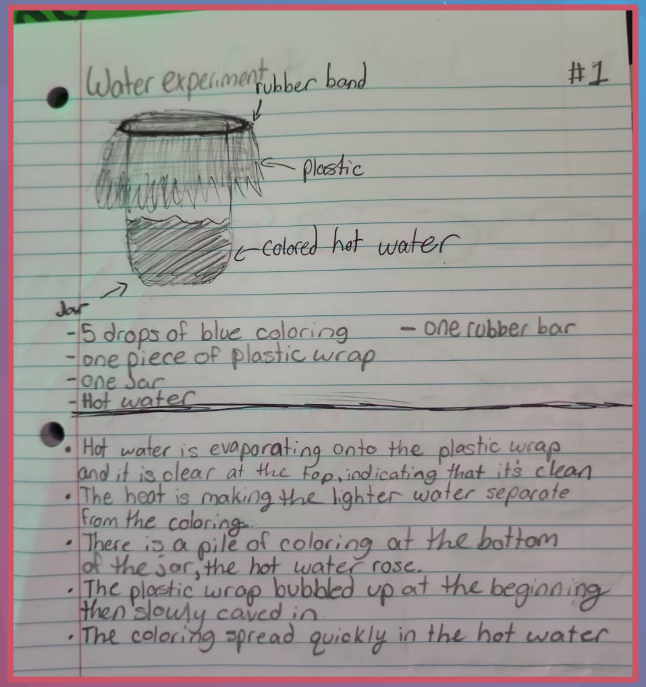
These are both 9a (Right) and 9b's (middle) water filters and how they performed. We placed the original dirt water (Left) for comparison it had a water drop drip down once about every 2 seconds.

M0-3: Investigating Water on Earth and the Moon

Date Completed	Lead Student	Participating Students
4/02/25	Ava	Sandhana, Ava, Ela, Jane, Srejon, Emma

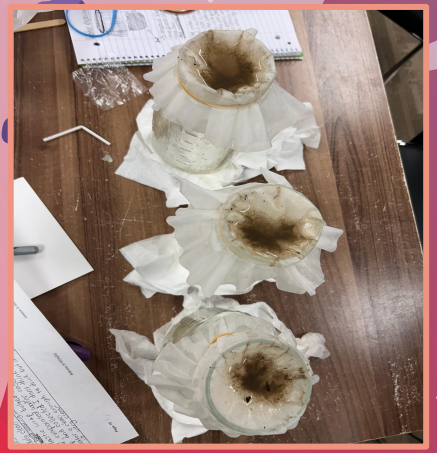
Include a description of the prototype:

- We estimate that we will get 0.143 cups a day because we got one cup of water over a week.
- For our prototypes, we made homemade filters using plastic bottles and dirt as well as other materials such as gravel, sand, and rocks, that would help the filtration process. These items were obtained right outside PAL, the organization that we do this challenge through.



Our drawing and notes on the food coloring and hot water test

M0-3: Investigating Water on Earth and the Moon

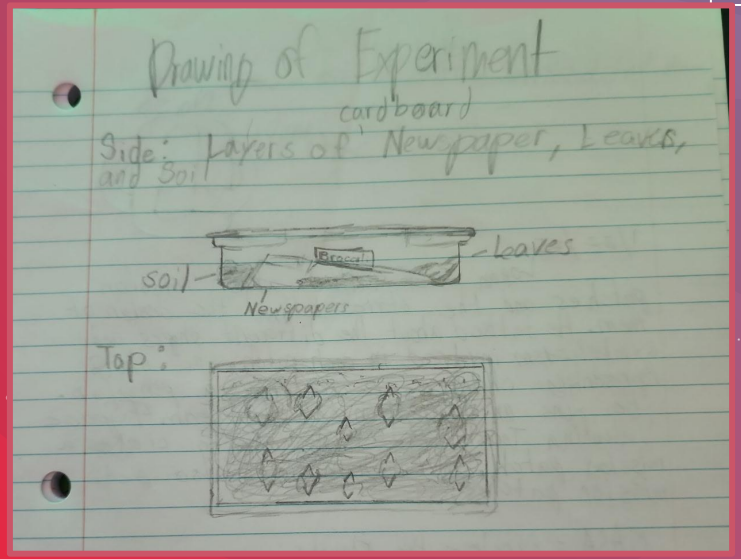


Conclusions of experiments

We found that our own model of the water filter (right experiment on right photo) did filter the water. Now is this water drinkable? It doesn't look like it is but it is much clearer than before. It took about 15-20 minutes to filter all of the water that we had put into it. It was relatively quick but it could have been filtered more thoroughly. Our estimated rate for filtration is over 168 hours one cup of water is filtered. Now with our other experiments (left), we noticed that the experiment that filtered the water the best was the hot water and food coloring experiment. Our filter uses items found right outside of PAL, such as rocks. Using naturally found materials, we have mimicked the natural filtration system of Earth, with layers of various sizes of rocks and sand. However, the water is not completely non-hazardous to drink. We believe that it filtered the most thoroughly because the food coloring was too dense to evaporate so it separated. We noticed that all of these experiments did filter the water put into them, to a certain extent.

M0-4: Growing Food on the Moon

Date Completed	Lead Student	Participating Students
4/30/25	Ava	Sandhana, Ava, Ela, Jane, Srejon, Emma



This is the drawing of our gardening set-up.

This is our indoor gardening set up, situated next to a window for sunlight, with the broccoli on the middle row left, strawberries on the middle row right, and the peanuts on the bottom row.

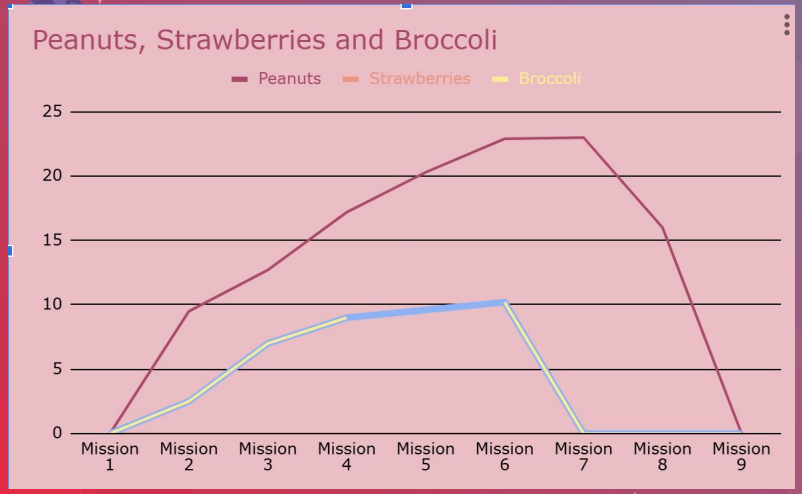
M0-04 Team Photos

Sandhana (left), Jane (middle) and Ela (right) work on planting strawberry seeds. Jane and Ela are in Artemis Tax-Free Space Stallions 9b. (Jan 4, 2025)

Ava (right) and Ahmet (left) plant 12 peanut seeds in the soil. (Jan 4, 2025)

Both Artemis Tax-Free Space Stallions 9a and 9b work together to measure out the amount of soil we need for each type of plant. (Jan 9, 2025)

Table/Graph of Plant Growth



While there seems to be no line for the strawberries, there is one! We experienced no growth with the strawberries (we believe due to mold), therefore the line is a horizontal line along the x axis.

All our plants ended up dying on 4/30/25

The plants are measured in centimeters.

- Peanuts
- Strawberries
- Broccoli

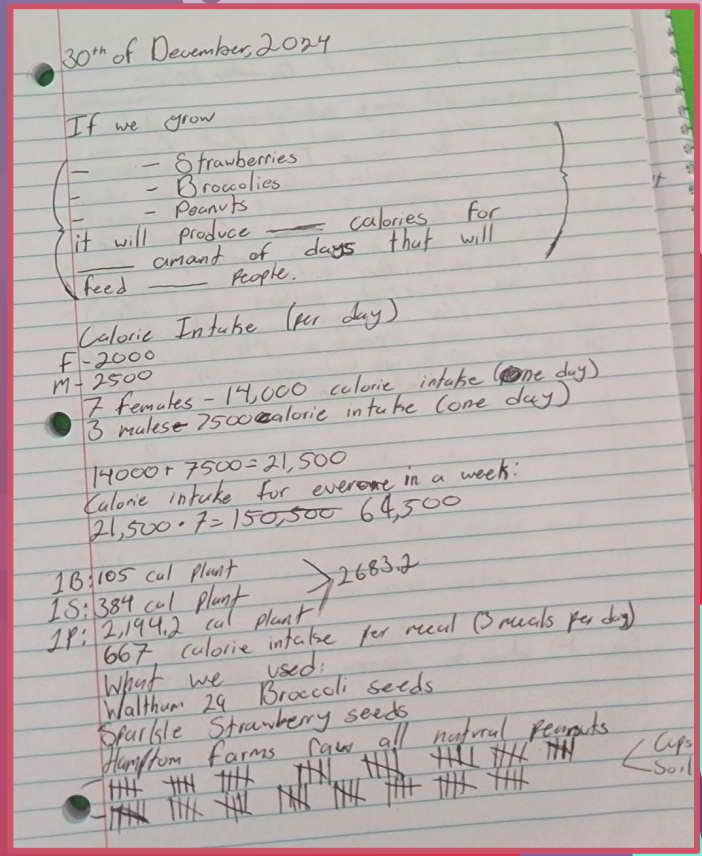
We take measurements at the start of every meeting; Wednesdays at 5:00 PM.

	Mission 1	Mission 2	Mission 3	Mission 4	Mission 5	Mission 6	Mission 7	Mission 8	Mission 9
Peanuts	0	9.5	12.7	17.2	20.3	22.9	23	16	0
Strawberries	0	0	0	0	0	0	0	0	0
Broccoli	0	2.5	7	9	6.4	10.2	0	0	0

Agricultural Plan Claim

Claim: If we grow (x amount of) strawberries/broccoli/peanuts, it will produce (y amount of) calories for (z amount of) days to feed (a amount of) people
Evidence: We researched using trusted sources on the internet.
Calculations: (See Picture)
Assumptions: The plants will grow to their full potential and there will be little shortcomings.

The calculations for our Agricultural Plan Claim are below.



30th of December, 2024

If we grow
- Strawberries
- Broccolies
- Peanuts

it will produce ___ calories for ___ amount of days that will feed ___ people.

Calorie Intake (per day)
F-2000
M-2500
7 females - 14,000 calorie intake (one day)
3 males 2500 calorie intake (one day)

14000 + 7500 = 21,500
Calorie intake for everone in a week:
21,500 · 7 = 150,500 64,500

1B: 105 cal plant
1S: 384 cal plant
1P: 2,194.2 cal plant
667 calorie intake per meal (3 meals per day)
What we used:
Waltham 29 Broccoli seeds
Sparkle Strawberry seeds
Hampton Farms raw all natural peanuts

M0-7: Envisioning Your Role

This mission involved researching a specific career at NASA that each of us would like to pursue. Here is Emma Abdrabouh's.

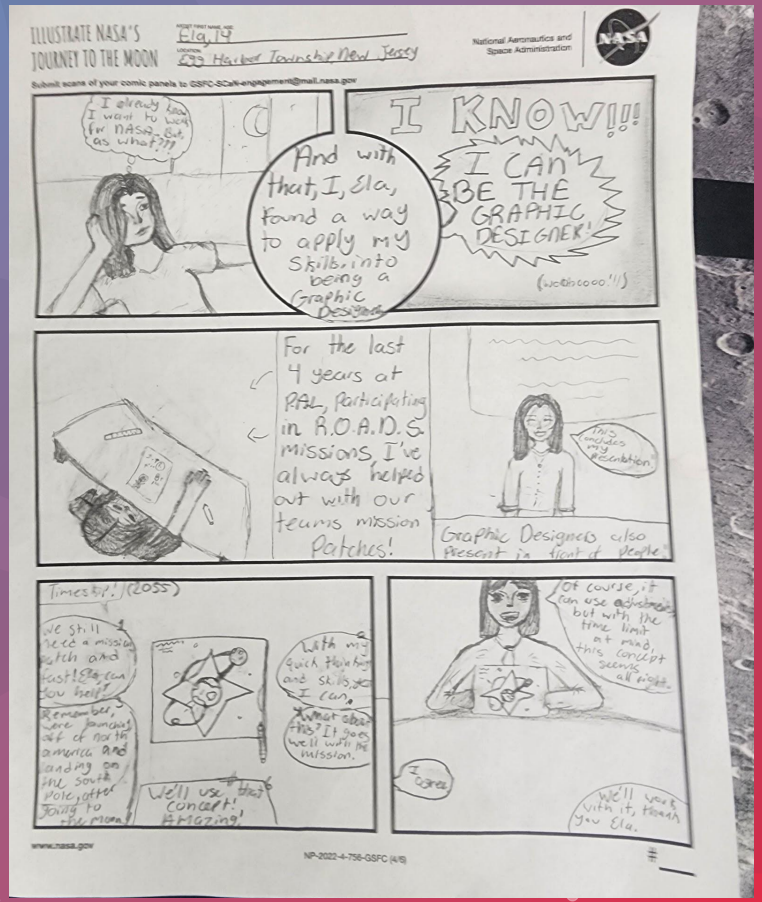
Emma wants to be an actress to present Nasa's work through the big screen and to help Nasa show what work they have accomplished and their plans for the future.

M0-7: Envisioning Your Role

This mission involved researching a specific career at NASA that each of us would like to pursue. Here is Ava Abdrabouh's.

M0-7: Envisioning Your Role

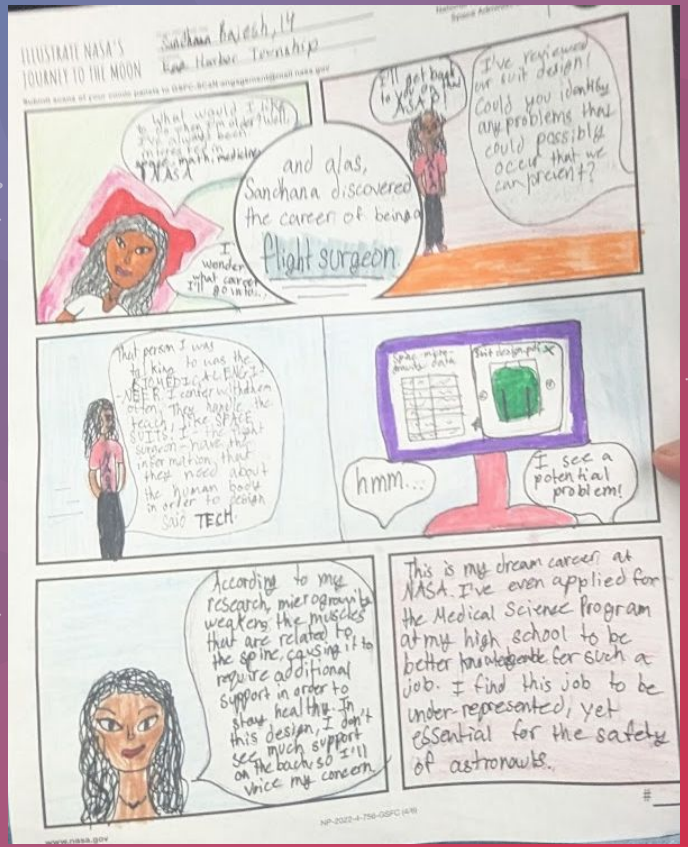
- This mission involved researching a specific career at NASA that each of us would like to pursue. Here is Ela Comlekciogullari's.



To further explain, Ela would like to be a graphic designer is possible at N.A.S.A. She is still improving her artistic skills, however, she has been a major help in the mission patches for our R.O.A.D.S. team. Also, with her quick, creative thinking skills, if anything goes wrong she can make many various different designs. That is a way she could potentially help N.A.S.A..

M0-7: Envisioning Your Role

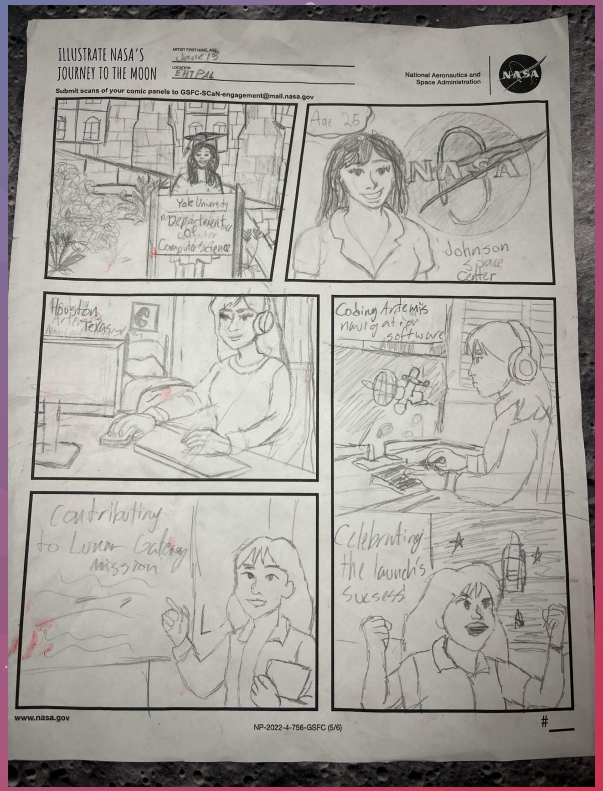
This mission involved researching a specific career at NASA that each of us would like to pursue. Here is Sandhana Rajesh's.



Sandhana wants to pursue a career that is medical-related, yet still at NASA. After research, she stumbled upon the career of being a flight surgeon. It intrigued her, and she decided to make her comic based upon said career. She even had applied to the Medical Science Academy at her high school, and recently got accepted!

M0-7: Envisioning Your Role

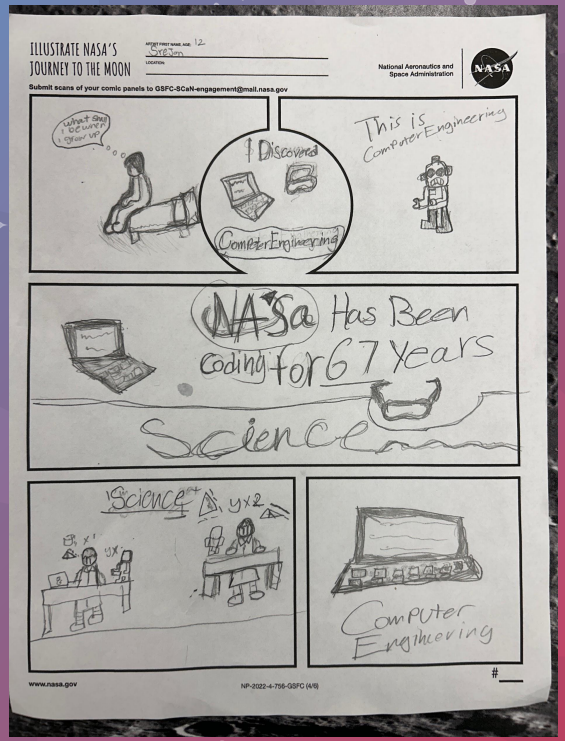
- This mission involved researching a specific career at NASA that each of us would like to pursue. Here is Jane Heng's.



M0-7: Envisioning Your Role

This mission involved researching a specific career at NASA that each of us would like to pursue. Here is Srejon Sikder.

Srejon Sikder



Srejon wants to be a computer Engineer
To represent and help building and coding for N.A.S.A,
Also want to build a better future, complete missions from NASA as well.