LUNAR LEGION TX0034A

TRIPOINT ACADEMY

CAELAM CAZARES

SAMANTHA BROWN

JACKSON RUSSELL

JAX CRAMPTON

FLOYD HENDERSON

RYAN CORREIA

Table of Contents (Click here to view details in the Challenge Manual)

MO and Title (Click to jump to each MO)		Done (Yes or No)	Date Completed	Lead Student	Participating Students
MO-1	Documenting Your Mission	Yes	1/25/2025	Ryan	Sam, Floyd, Caelam, Jax, Jackson
MO-2	Building a Strong Project Team	Yes	1/30/2025	Jax	Sam, Floyd, Caelam, Ryan, Jackson
MO-3	Investigating Water on Earth and the Moon	Yes	2/20/2025	Caelam	Floyd, Jax, Sam, Jackson, and Ryan
MO-4	Growing Food on the Moon	Yes	5/30/2025	Jax	Floyd, Ryan, Sam, Jackson, Caelam
MO-5	ROV-ing Under the Moon	Yes	5/30/2025	Jackson	Sam, Jax, Ryan, Floyd, and Caelam
MO-6	Designing a Human Rated Rocket	Yes	5/30/2025	Jax	Jackson, Caelam, Ryan, Floyd, Sam
MO-7	Envisioning Your Role	Yes	5/30/2025	Ryan	Sam, Floyd, Caelam, Jax, Jackson
MO-8a or 8b	Reflecting on and Presenting Your Mission	Yes	5/30/2025	Ryan	Floyd, Jax, Jackson, Sam, Caelam
WILW	Wing it Like Winglee	No			

MO-1: Documenting Your Mission

Checkpoint Guidelines

- For Checkpoint #1:
  - Complete Team Slide and Table of Contents Slide
  - Complete MO-2
- For Checkpoint #2, all of the above, plus three more Mission Objectives of your choice
- Check Submission Guidelines!

Final Submission Guidelines

- Complete Team Slide and Table of Contents Slide
- Add Slides for each Mission Objective you complete after the green Guidance slide for that MO
- Export this file as a PDF
- 50 Page Limit (Total)
- Check Submission Guidelines!

MO-1: Documenting Your Mission

Date Completed	Student Name
	Caelam Cazares

Short Bio: My name is Caelam and I am in 8th grade. My favorite school subject is math and I don't know what I want to be when I grow up. I like Football, Video games (specifically rainbow six siege) ,and working out in my free time. I am apart of the ARTEMIS program.

Mission Objective	**Funds of Knowledge** (What knowledge, skills, and resources are you bringing with you from your home/ community that you can use to help you complete each of the Mission Objectives?)
MO-1	The Funds of Knowledge **I** brought for this mission is I explained the notes really well to my teammates so they were able to understand certain things
MO-2	I mostly gave ideas to the artists (jax),(ryan) and contributed to the research of our different members.
MO-3	I did the water map,and also provided my team with info about our prototype
MO-4	Was not in this mission
MO-5	Was not in this mission
MO-6	Helping Jackson,Jax with getting the mechanics for the rocket along with making designs
MO-7	I created my script and used the help of my friend to record my interview video
MO-8	

MO-1: Documenting Your Mission

Date Completed	Student Name
	Samantha Brown

Short Bio: My name is Samantha and I am in 8th grade. My favorite school subject is Art and I don't know what I want to be when I grow up. I like to read,draw, and craft. I am apart of the ARTEMIS club.

Mission Objective	**Funds of Knowledge** (What knowledge, skills, and resources are you bringing with you from your home/ community that you can use to help you complete each of the Mission Objectives?)
MO-1	We read the comic, learning what it's like to be an astronaut, and how plants are grown in space. We took detailed drawings of things such as the SLS rocket parts, and what they do and what they're called. I bring my artistic skills and good note taking to the Funds of knowledge.
MO-2	We created our patch and discussed what should be put onto said patch, helping each other to customize and finalize our amazing patch. I brought my creative ideas and artistic skills into the patch.
MO-3	During mission three I helped with the water cycle map and helped make a document explaining it.
MO-4	I helped to use fish as the animals for our experiment, putting them in water beneath the plants to see if they'd help the plants grow faster, or slower.
MO-5	We started by researching all the different kinds of rovers made by nasa, taking notes and watching documentaries about them so we could take attributes and adaptations from them to create our own rover. Once we had our rover, we began coding it on the lego.spike app. We ran a few tests before setting up the "lava tunnels" for our rover to go through.
MO-6	We built a rocket with a 3D printed top, that held the astrochip in it and when it would be launched, the top would come off and let out a parachute to keep the chip from being broken.
MO-7	I took the appearance of an Art director for my interview, and did careful research to prepare my script.
MO-8	I supported and helped my team in the ways that I could as we rated ourselves on each mission accordingly.

MO-1: Documenting Your Mission

Date Completed	Student Name
May 30th, 2025	Ryan Correia

Short Bio: My name is Ryan and I'm in 8th grade. I love all school subjects, specifically math and reading. I'm not quite sure what I want to be when I grow up but I want to create some kind of change in the world. I like to sing, play violin, and school work.

Mission Objective	**Funds of Knowledge** (What knowledge, skills, and resources are you bringing with you from your home/ community that you can use to help you complete each of the Mission Objectives?)
MO-1	The Funds of Knowledge I brought to MO-1 was the ability to explain thing really well to other who may not understand and the ability to see things from multiple perspectives.
MO-2	The Funds of Knowledge I brought to MO-2 were the abilities to give ideas to help the team come up with a patch design and my ability to write for the patch narrative.
MO-3	The Funds of Knowledge I brought to MO-3 were the abilities to help map out and find things on a map and and get the photo of San Antonio.
MO-4	The Funds of Knowledge I brought to MO-4 were the abilities to help gather data and help set up the lights.
MO-5	The Funds of Knowledge I brought to MO-5 were the abilities to design and create a rover and coding the rover with previous knowledge of coding.
MO-6	The Funds of Knowledge I brought to MO-6 were the abilities to help connect the strings because I make bracelets a lot and I helped all the teams set up their rockets
MO-7	The Funks of Knowledge I brought to MO-7 were the abilities to help edit all the videos together and the ability to help everyone write their scripts.
MO-8	The Funds of Knowledge I brought to MO-8 were the abilities to rate myself and my team on what we did and recording the videos and editing them.

MO-1: Documenting Your Mission

Date Completed	Student Name
May 30th Friday, 2025	Jackson Russell

Short Bio: My name is Jackson and I am in 6-8th grade taking a few 8th grade classes. My favorite school subject is Math and I want to be some type engineer when I grow up. I like to draw, create things involving electricity, animating, and finding ways to simplify difficult tasks. My funds of knowledge are described below.*

Mission Objective	
	Funds of Knowledge I was able to explain and show how fission worked as well as explain how fusion work also. I also help other with understanding the engineering behind rockets and some of the mechanics within the said rocket. I also made a “Detailed” Animation —> https://docs.google.com/presentation/d/1G74ckXjzw2sCb_-5AL3dOh7x_ucEcBq1GG_Wq1I8lpY/edit?usp=sharing
MO-1	I explained fission to the whole class, learned about the plan for Artemis,
MO-2	I helped give design ideas for the patch such as a way to include everyone own unique and cultural additions.
MO-3	Water stuff
MO-4	Plant Growth
MO-5	Rover
MO-6	Basically making a rocket,
MO-7	Interview
MO-8	Reflect

MO-1: Documenting Your Mission

Date Completed	Student Name
insert date here	Jax Crampton

Short Bio: My name is Jax and I am in 8th grade. I love everything about my school but my favorite subjects are math and science. I want to be an aeronautical engineer when I grow up. I like to play sports, read books and create robotic machines.

Mission Objective	
	Funds of Knowledge I have an understanding and experience with water filtration systems. I am good at note taking and drawing diagrams. I can I am good at communicating and leading a group to success, and I hope that I can do that in this artemis roads mission.
MO-1	In mission one we learned about the importance of note taking. The funds of knowledge that I bring to the team include that Note taking and drawing are some of my specialities. I have talent with making diagrams and taking detailed accounts of what happens. I am good at communicating and leading a group to success, and I hope that I can do that in this artemis roads mission.
MO-2	I am skilled in pottery weaving digital art and some ceramics. I also have an understanding of the color palette and contrasting colors.
MO-3	I have used and made water filters many times so I understand what minerals are needed for water filtration
MO-4	Designing and creating ideas are something I am good at. I used these skills to help decide on our control factor and how we would implement this in our design. I also contributed largely to the actual design of our plant setup which was important to the success of the mission.
MO-5	I wasn't part of this project to much but i did help with the code and some of the operations when i had the time. I was helpful to this because I know how to problem solve and I know some valuable coding from classes that i took and experience in scratch.
MO-6	I designed almost all of the rocket and worked through the pressure of time running low, I fixed problems and made sure our rocket was perfect.
MO-7	I am well organized and am prolific at writing so I was able to write the script. I also have a lot of knowledge of aerospace engineering.
MO-8	

MO-1: Documenting Your Mission

Date Completed	Student Name
_-_-2025	Floyd Henderson

Short Bio: My name is Floyd Henderson and I am in 6 grade. My favorite school subject is Artemis and I want to be a large animal veterinarian when I grow up. I like to play video games, do karate, read books, and build legos . I am a second degree black belt at Victory Martial Arts and Victory for Life . My funds of knowledge are described below.*

Mission Objective	**Funds of Knowledge** (What knowledge, skills, and resources are you bringing with you from your home/ community that you can use to help you complete each of the Mission Objectives?)
MO-1	I have previous experience with a computer so I was able to help with research
MO-2	I have knowledge of the zodiac signs which I used to help my team with the mission patch
MO-3	I was an asset to my team because I have knowledge of building so I helped assemble the water filter
MO-4	I have previous knowledge of owning fish
MO-5	I helped build the rover with my previous knowledge of lego and robotics
MO-6	I have knowledge in building so I helped to create the rocket
MO-7	I have an ability to write scripts so I did mission 7 easily
MO-8	I have an ability to judge myself and others so this mission came easily as it was reflection

MO-3: Investigating Water on Earth and the Moon

Checkpoint Guidelines

- For Checkpoint #2, this could be one of the three additional MOs that you submit
- Check Submission Guidelines!

Final Submission Guidelines

- Complete the next slide
- Add more slides after that with videos, data tables, and additional descriptions of your work
- Visit the Challenge manual for more details on deliverables for this Mission Objective
- Check Submission Guidelines!

MO-4: Growing Food on the Moon

Checkpoint Guidelines

- For Checkpoint #2, this could be one of the three additional MOs that you submit
- Check Submission Guidelines!

Final Submission Guidelines

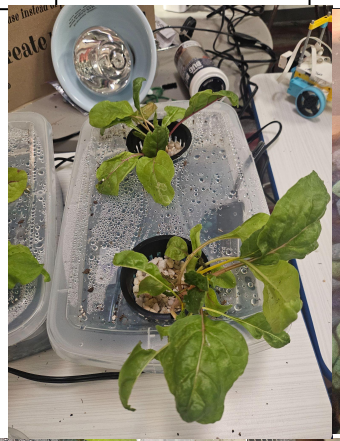
- Complete the next two slides
- Add more slides as needed to met the deliverables
- Review MO-4 to ensure that you are meeting all of the deliverables!

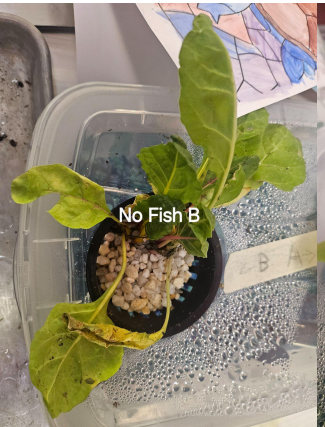
MO-4: Growing Food on the Moon

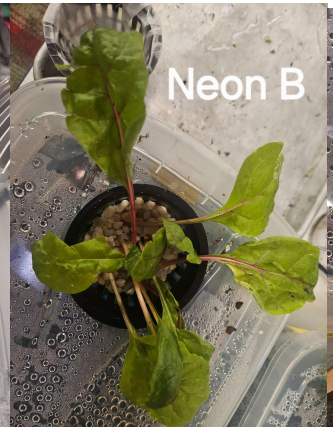
Date Completed	Lead Student	Participating Students
5/30/2025	Jax	Floyd, Ryan

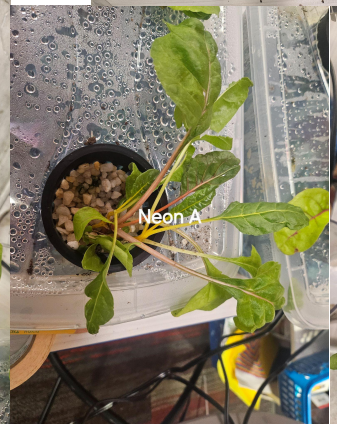
Experiment Deliverables

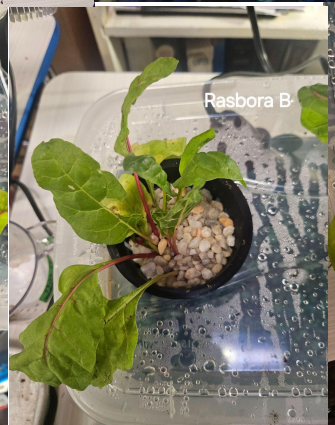
- Controlled variables: the type of fish or if it had no fish
- Dependent variables: the health of the swiss chard
- Independent variables: the gravel the tank the heater the fish food.
- We took measurements every day and measured by taking pictures











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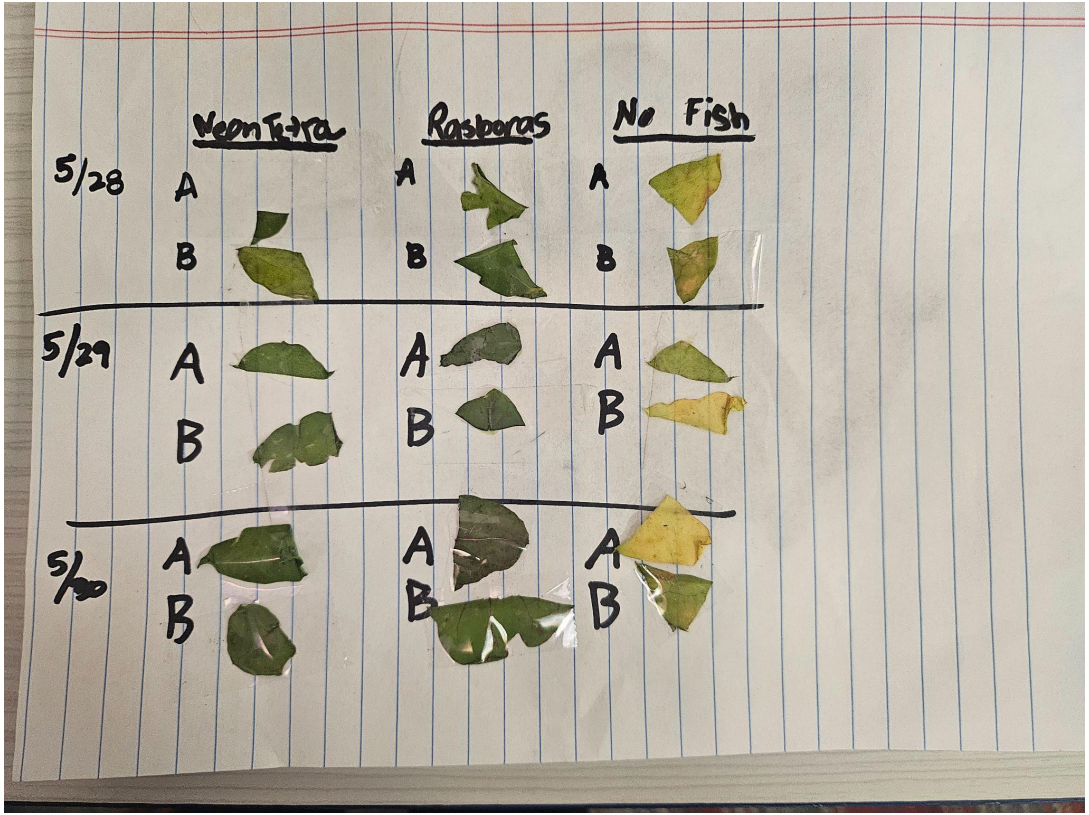
Neon Tetra
Rasboras
No Fish
5/28
A
B
A
B
A
B
5/29
A
B
A
B
A
B
5/30
A
B
A
B
A
B

Agricultural Plan Claim (Template)

DIRECTIONS: Complete this table OR upload an image of a template that you've completed by hand.

Claim(s): The fish that we are using have a mutualistic symbiotic relationship with the plants. Our plants naturally give minerals and nutrients to the fish which will in return supplement the plants growth and keep them healthy
Evidence: The swiss chard was noticeably more green and healthy in the spots with fish than they were in the spot without fish. The experimental tanks also had much fuller and more rigid plants with a more vibrant color.
Calculations: our calculations are based on the health and growth of the plants based on the type of fish or if it had no fish. We used observations of sight color and rigidity of the plants to determine their health and how well our method worked.
Assumptions: We can assume that the astronauts in space would use different plants because chard is low in calories, additionally we know that the fish will work with all plants and that it does not matter which one you choose to use.

We thought that our hydroponics system did very well. Both the plants in the tanks containing fish were notably more healthy than the tank without fish. The plants in the non fish tank were discolored and withering, even with the help of vegetation lights. On the other hand the plants with fish showed great health, having healthy colors and a strong structure. We had to work through difficulties when we were not able to obtain the money we needed to get our materials but, we were able to overcome this and change our plan slightly to form to the restraints that we came across. We changed the plant we used due to expenses and we revised the setup for our plants and fish but, we were still able to accomplish and finish our requirements. In the end it worked very well and our plan was workable and sustainable for astronauts in space.

MO-6: Designing a Human Rated Rocket

Checkpoint Guidelines

- For Checkpoint #2, this could be one of the three additional MOs that you submit
- Check Submission Guidelines!

Final Submission Guidelines

- Complete the next slide
- Add more slides after that with drawings, narrative descriptions, videos, photos, or additional descriptions of your work.
- Visit the Challenge manual for more details on deliverables for this Mission Objective

Space Pringle

My pringle’s name is Valery Tokarev, he is a Russian cosmonaut and retired Air Force colonel who played an important role in the history of human spaceflight. Born on October 29, 1952, in Kap-Yar, Russia, he began his career as a military pilot before being selected for cosmonaut training in 1987. His first space mission was in 1999 aboard the American space shuttle *Discovery* during the STS-96 mission, where he helped deliver supplies to the International Space Station (ISS). This mission marked a key step in the early assembly of the ISS, showing international cooperation in space exploration.

Tokarev’s second mission was in 2005 as the commander of Expedition 12 aboard the ISS. He spent about six months in space, performing scientific experiments and spacewalks alongside American astronaut William McArthur. During this mission, they maintained and upgraded the ISS, contributing to its long-term use. Tokarev's career reflects both his technical skill and his role in strengthening Russian-American collaboration in space. His work helped lay the foundation for the ongoing operation of the ISS as a hub for international science and exploration.

MO-6: Designing a Human Rated Rocket

Date Completed	Lead Student	Participating Students
5/30/2025	Jax	Jackson, Caelam, Ryan, Floyd

We have made a rocket for MO-6 using a plastic 2 liter bottle, a 3d printed nose cone, and slanted fins. We also designed a release mechanism that would allow the head of the rocket to detach allowing the pringle to fly down to the ground safely. We faced problems with the release mechanism opening when we didn't press the button. We also faced problems with the launch mechanism, on the first attempt our rocket launched but the launch mechanism was pulled and the cinder block wasn't stopping the launch mechanism from moving. The top picture on the left shows the head of the rocket attached to the body of the rocket and the bottom two are separate and the smaller picture on the right is the release mechanism.

Launch Data Collection Worksheet

Rocket Design Number: _______1_____________

Launch Number:	1	2	3
Date and Time:	05/29/2025 12:20 PM	05/29/2025 12:30 PM	05/29/2025 12:51 PM
Wind Speed:	6.5 mph	6.5 mph	7 mph
Temperature:	81	79	81
Volume of water:	1.5 liters	1.5 liters	1.5 liters
Pressure of water:	46 psi	55 psi	55 psi
Maximum Altitude:	25	60	88
Range:	30 ft	20 ft	4 ft
Stability:	Circle one: 4 - Maintains direction of travel and straight path the entire flight. 3 - Only veers off its path when it is traveling at low speeds. 2 - Does not maintain its direction of flight or flies with a corkscrew pattern. 1 - Tumbles and stays close to the ground.	Circle one: 4 - Maintains direction of travel and straight path the entire flight. 3 - Only veers off its path when it is traveling at low speeds. 2 - Does not maintain its direction of flight or flies with a corkscrew pattern. 1 - Tumbles and stays close to the ground.	Circle one: 4 - Maintains direction of travel and straight path the entire flight. 3 - Only veers off its path when it is traveling at low speeds. 2 - Does not maintain its direction of flight or flies with a corkscrew pattern. 1 - Tumbles and stays close to the ground.
Sturdiness:	Circle one: 4 - No damage 3 - Minor damage 2 - Significant damage 1 - Needs to be completely rebuilt.	Circle one: 4 - No damage 3 - Minor damage 2 - Significant damage 1 - Needs to be completely rebuilt.	Circle one: 4 - No damage 3 - Minor damage 2 - Significant damage 1 - Needs to be completely rebuilt.

On the first attempt, the launch mechanism wasn't secured correctly and ended up moving, this caused our rocket to not go high but have a long range. The astronaut was not harmed.

On the second attempt, there wasn't enough pressure which caused the rocket to not go as high. The button for the release mechanism was also pressed to late which caused the astronauts to die.

On the last attempt we had just the right amount of pressure and we released the mechanism at the correct time, this cause the last attempt to be the best attempt we had.

Launch Results

MO-7: Envisioning Your Role

Checkpoint Guidelines

- For Checkpoint #2, this could be one of the three additional MOs that you submit
- Check Submission Guidelines!

Final Submission Guidelines

- Complete the next slide
- Add more slides after that with design drawings, scale calculations, photographs, videos, data tables, and additional descriptions of your work.
- Visit the Challenge manual for more details on deliverables for this Mission Objective

MO-7: Envisioning Your Role

Date Completed	Lead Student	Participating Students
5/30/2025	Ryan	Sam, Floyd, Caelam, Jax, Jackson

https://drive.google.com/file/d/1rKsfhiTZpwXtIARp8S9umXjU4U296yZ_/view?usp=drivesdk