



**Prize Winner**

# Science Writing Year 5-6

**Venuki Kodithuwakku**

**Mawson Lakes School**





Living on the Moon:  
***Refuge number two:***  
***The Inaugural Moonbase***

~Venuki Venara Kodithuwakku~

Year 6, Mawson Lakes School

**C**haldene looked outside. It was pitch-black, only a few stars to light the crew to their new home. Above was a looming grey ball of rock: their destination. Bags overloaded, inevitable hugs- this was the last time they'd ever STEP on this planet. For they were to immigrate.



## TO THE MOON...

Landing was a success! Chaldene and the crew donned their spacesuits and strode across the lunar surface. But- WOAHH!

“The moon’s gravity is a sixth of Earth’s, so you can jump higher and weigh lighter too,” explained their senior guide, Himalia, approaching their new moon base. A dome-shaped building stood ahead.

“Giant 3D printers and robots built these airtight domes. There’s a combination of lunar regolith and a custom polymer as the wall, a subordinate metal and plastic wall and a 20 cm shield of polyethylene as protection against meteorites and UV radiation,” Himalia informed, “No atmosphere equals no protection against meteors, cosmic and zenith-high UV radiation and solar flares.”

As the crew went inside, Chaldene spotted multiple lifts and corridors in the spacious white room as they took off their oxygen suits.

“Can’t we breathe on the moon?” she inquired.

“No. However, 40% of the lunar regolith is oxygen, which is trapped inside minerals, which take up 90% of the lunar regolith. We used *ELECTROLYSIS* to separate the oxygen atoms from the regolith and minerals. We also extracted oxygen from the frozen water at the moon’s south pole. Additionally, we brought some plants to supply us with oxygen through photosynthesis,” Himalia recalled, “13 m<sup>2</sup> of plants or 8 m<sup>2</sup> of algae per person is adequate! We also have airlocks to get in and out without letting the air escape!”

As bedtime approached, everyone was put on a centrifuge, a device that depicts Earth’s gravity.



Everyone was up and early, confabulating in the hall.

“Sleeping on the bed depicted a boat’s rocking!” Cyllene mentioned.

\*All the characters’ names are in fact based on Jupiter’s moons.

Chaldene, Himalia, Cyllene, Dia, and Arche

"I couldn't sleep because the sun was glistening at its zenith—"

" ALL RIGHT EVERYONE! Ready for day two?" Himalia boomed as a few groaned. They entered the kitchen, which had packaged food on the table.

"Breakfast! You can have freeze-dried food that is placed into a plastic bag and warmed by a pipe injecting hot water. Another option is ready-to-eat food in tubes. However, you can always have veggies grown in the greenhouse!" she replied as she gesticulated her crew to the greenhouse. Inside were many metal crates loaded with soil and green shoots.

"We grow all sorts of plants! Sunlight here is imminent for 14 days, followed by 14 days of darkness. That's why we have LED lights to resemble sunlight, CO<sub>2</sub> from the air, and a watering system to supply water," Himalia conversed as the water was sprayed out.



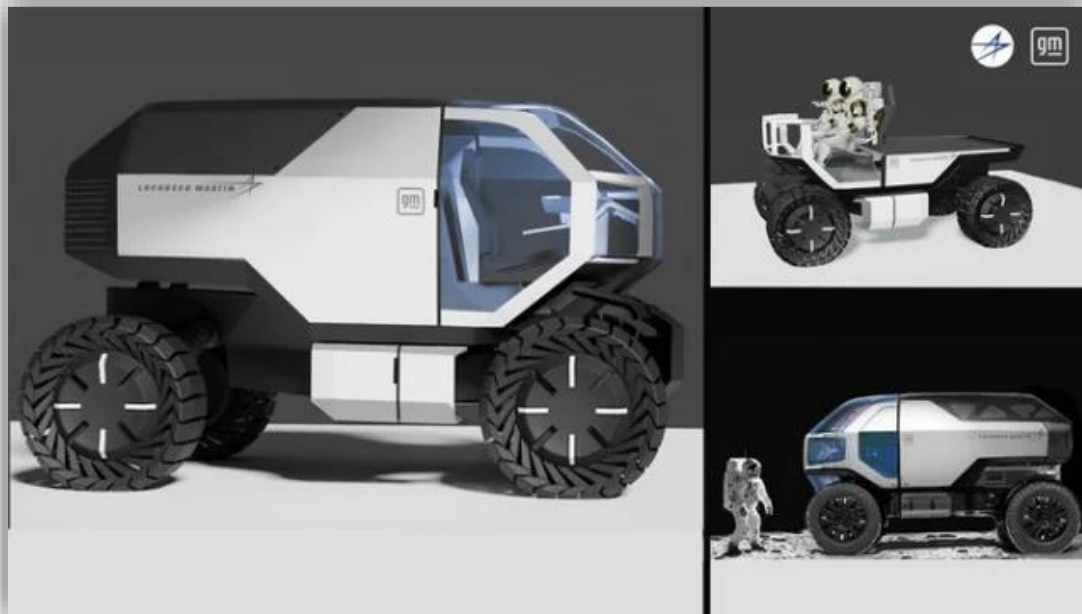
"But where does the water come from?" asked Dia.

"We get our water; garden, drinking and washing, from many alternatives: we can mine the south pole for frozen water, recycle dish-washing water and urine and use leftovers from electrolysis.

Our bodies require two litres of water per day” Himalia added. The crew then spent the rest of their day tending the shoots in the greenhouse.

Early morning, Himalia had ordered them to meet her at the docking station for a surprise. Turned out, it was an immense vehicle.

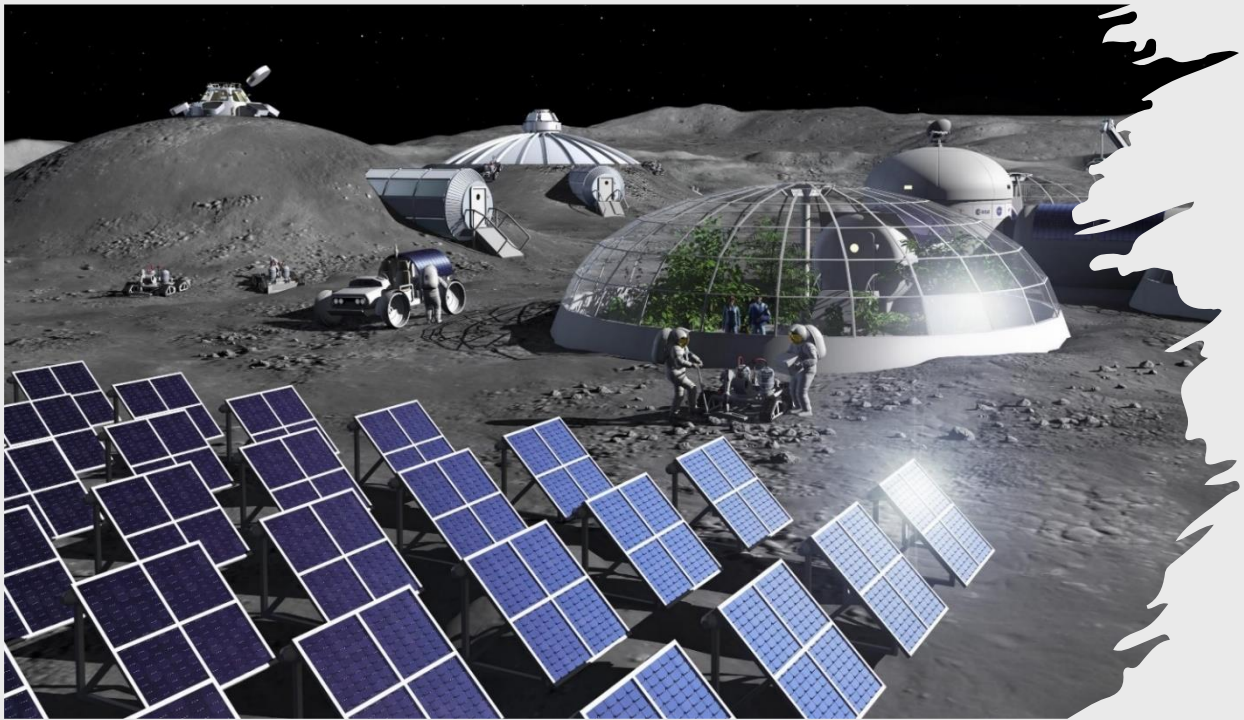
“Meet our main source of transportation! **Luna!** It’s got its own air supply and can withstand heavy weight. We use cable cars that are powered by the sun,” Himalia lectured as they hopped on and meandered away. A white dome facility awaited. Luna halted as the *green* passengers jumped out.



“That’s the waste management facility. On the moon, we’ve dome-villages full of incessant waste. So, we built the Waste Management Facility to reduce and maintain it. Organic matter and plants perform anaerobic composting, the result being great for soil, produces heat and methane gas. Materials like plastic and metals are re-3D printed into something else,” Himalia informed as they entered the building inquisitively.

The break of dawn hit, and the crew were ambling across the terrain and past a throng of solar panels.

“Powering our homes is vital. The moon has 14 days of sun, then 14 days of darkness. During the dark weeks, we get no source of light therefore our gardens will fail. So, we enhanced our solar panels to store solar power inside fuel cells that’ll last seventeen days when full! However, moving to one of the poles almost guarantees you sunlight!” she explained, heading back.



On top, was a flashing red light. “What’s that?” Arche asked.

“They’re lasers. No air means no sound. Instead, we use radio waves and lasers to communicate. Lasers are more effective and faster, travelling at 300,000km/sec, however, you’ll need to be inside and needs to hit the receiver directly. That’s why we’ve installed them on high towers,” Himalia explained, heading inside.

A week later, early morning, the staff; slightly fewer, traipsed to the crew's bedrooms to find the door unlocked. Inside, the room and air were completely spotless. And yet. The crew. They.... were gone. Only a piece of paper stood on behalf of them:

Dear friends-

Research the reason might be, but humans are plotting to live on the moon permanently. However, we have our place right here. ON OUR EARTH. And it is time we look at our reflection in her water and see our true selves, merely a human but a thing. It has no use nor purpose; it is just there. That's us. A burden. But not so long ago, we inhabited a different world. A world where we humans and earth thrived together for so many generations, where we peacefully inhabited the ground and mother nature by our side. Day and night, we would live happily, listening to the birds singing their merry tune and playing by the meadow until the break of sun. Until. A REVOLUTION came by and knocked on all our doors. However, we must promise our EARTH that we will step up and rise for her. A revolution is coming but we cannot digress our past with nature and the world. Let's continue this legacy as our ancestors have done for many generations. And take care of our earth.

- the crew



## **References:**

### **Videos**

TED-ed: living on the Moon <https://www.youtube.com/watch?v=I5V2tcg1BvQ>

Life Noggin- Why can't we live on the moon  
<https://www.youtube.com/watch?v=wG7byaLSmFU&t=6s>

### **Airbus Foundation**

Best place to live on the moon: <https://www.youtube.com/watch?v=EjOgdBm1dqg>

Robots on the moon: <https://www.youtube.com/watch?v=phY6pTL5mqw>

Water on the moon: <https://www.youtube.com/watch?v=wHJ3F7eIxEM>

Food on the moon: <https://www.youtube.com/watch?v=qo7snWZj17Q>

Meteors on the moon: <https://www.youtube.com/watch?v=oBNU1wH7CCs&t=15s>

What materials to build your home on the moon:  
<https://www.youtube.com/watch?v=2QpGXe85S3I&t=4s>

Radiation on the moon: <https://www.youtube.com/watch?v=CjK8q7YZc6E>

Travelling on the moon: [https://www.youtube.com/watch?v=023KfH\\_5qsw](https://www.youtube.com/watch?v=023KfH_5qsw)

Building your home on the moon: <https://www.youtube.com/watch?v=h5X3CTfShyE>

How to communicate on the moon: <https://www.youtube.com/watch?v=qgIGzKGdNM0>

Powering the moon: <https://www.youtube.com/watch?v=nI8JZwRyfuQ&list=PLjl-u2y72YNY8G3Ta8vwizGFziQbvCLG8&index=8>

Waste management on the moon:  
<https://www.youtube.com/watch?v=jmavqwQ0Suc&list=PLjl-u2y72YNY8G3Ta8vwizGFziQbvCLG8&index=12>

Air on the moon: <https://www.youtube.com/watch?v=jmavqwQ0Suc&list=PLjl-u2y72YNY8G3Ta8vwizGFziQbvCLG8&index=12>

Travelling on the moon: [https://www.youtube.com/watch?v=023KfH\\_5qsw&list=PLjl-u2y72YNY8G3Ta8vwizGFziQbvCLG8&index=14](https://www.youtube.com/watch?v=023KfH_5qsw&list=PLjl-u2y72YNY8G3Ta8vwizGFziQbvCLG8&index=14)

Sci-Show: What will it be like to live on the moon?  
[https://www.youtube.com/watch?v=T30BOkG\\_bdg](https://www.youtube.com/watch?v=T30BOkG_bdg)

### **Pictures:**

<https://www.popsci.com/uploads/2019/03/18/RQJGUT6UV2BEAZNVOUIAMUNXNL.jpg?auto=webp>

<https://www.theweek.in/content/dam/week/news/sci-tech/2019/May/moon-cloud-blue-shut.jpg.transform/schema-4x3/image.jpg>

[https://res.cloudinary.com/engineering-com/image/upload/w\\_640,h\\_640,c\\_limit,q\\_auto,f\\_auto/E-TC5OXWEAcw6sG\\_quum6x.jpg](https://res.cloudinary.com/engineering-com/image/upload/w_640,h_640,c_limit,q_auto,f_auto/E-TC5OXWEAcw6sG_quum6x.jpg)

[https://www.nasa.gov/sites/default/files/styles/ubernote\\_alt\\_horiz/public/thumbnails/image/nadia\\_in\\_deployable\\_grnhse\\_may\\_09-a.jpg](https://www.nasa.gov/sites/default/files/styles/ubernote_alt_horiz/public/thumbnails/image/nadia_in_deployable_grnhse_may_09-a.jpg)

<https://spectrum.ieee.org/media-library/image.jpg?id=29840194>

<https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQJSykNXfLJhDJ-h8VaZHLgFNW1aBzeEULlk7XzPPgJtkcXtFFv>

**Books/Websites:**

National Aeronautics and Space Administration (NASA)- SPACE NUTRITION book, 2012 [https://www.nasa.gov/sites/default/files/space\\_nutrition\\_book.pdf](https://www.nasa.gov/sites/default/files/space_nutrition_book.pdf)

Word Count: **841** (excluding front cover and crew letter).

Venuki Venara Kodithuwakku  
Year 6 Mawson Lakes School  
Science Writing 2023  
LIVING ON THE MOON