

*I'm finally off on a real adventure, to a place far away, where everything is going to be completely different from what I know...*

Jazz Harper has always admired her gran and loves nothing more than listening to her tales of exploration. Now, it is Jazz's turn as she and her mum blast off to where few have gone before: the planet Mars!

Life on Mars isn't quite what Jazz was expecting and, after months of travel to the Red Planet, she is disappointed by the school, the rules and the serious lack of excitement. However, when she and her friend, Elijah, sneak aboard the Mars explorer and secretly join the hunt for alien life, the adventure soon becomes very real...



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JAZZ HARPER: SPACE EXPLORER

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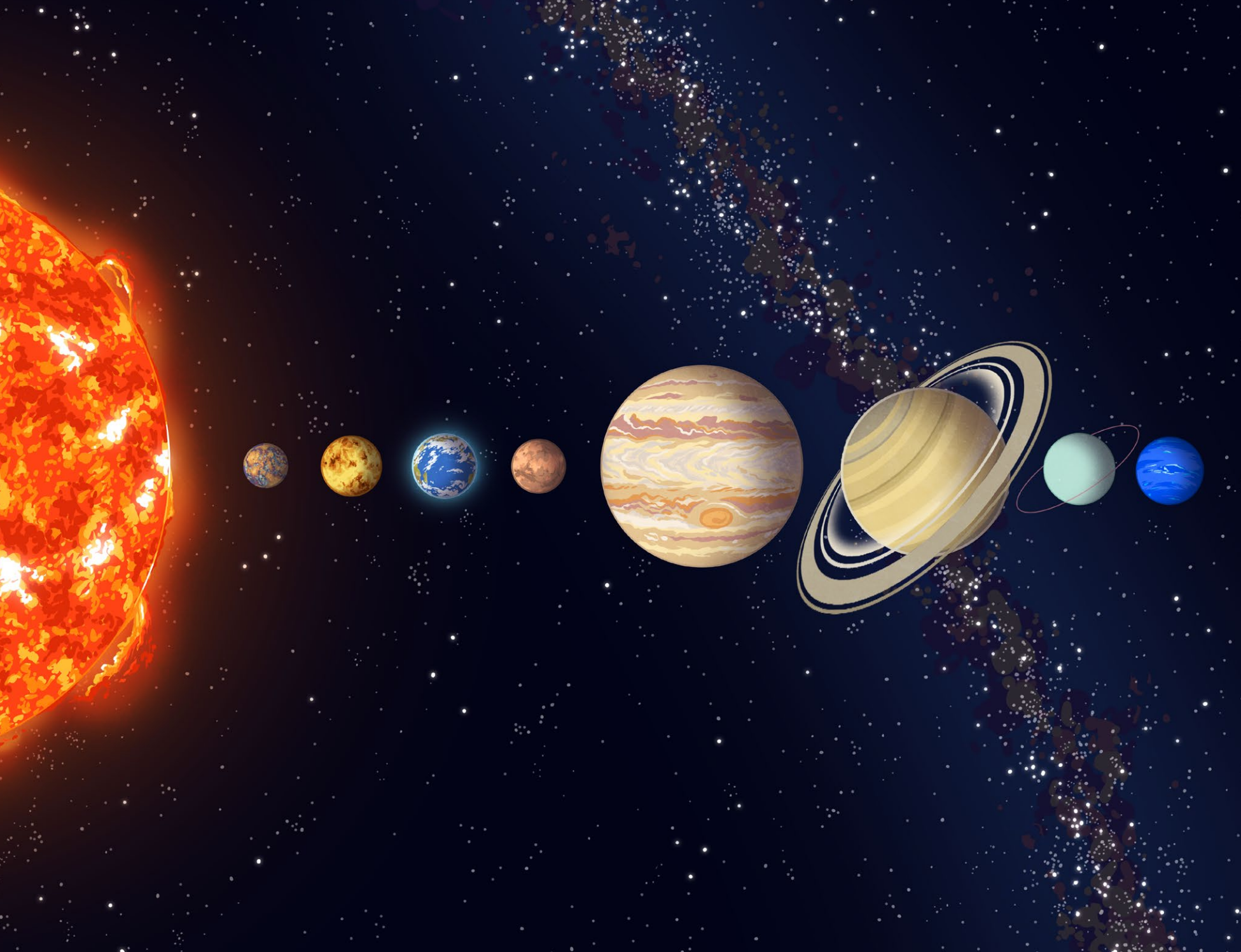
# JAZZ HARPER



# SPACE EXPLORER







A TWINKL ORIGINAL

# JAZZ HARPER



# SPACE EXPLORER

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## MARS YEAR 84

Nearly twenty Mars years ago, the extraordinary story of two children who discovered life on Mars heralded the beginning of a new era for the Marineris Colony and all humans living and working on the Red Planet.

Now, after many years, researchers have uncovered documents from the Marineris archives which shed new light on the discovery and the events that led to it.

Those documents are published here together for the first time. What follows is a story like no other...





CHAPTER 1:  
Ready for Lift-Off

28<sup>th</sup> May 2060

Dear Brand-New Diary of Adventure,

Today was our very last visit to Gran before our epic mission to Mars. Mum and I travelled there on the air tram, like usual. Did you know that air trams travel really, really fast? I looked it up on the map app on my webspectacles as we sped over the tall tower blocks and green parks. At one point, we got up to 147mph!

I asked Mum if that's how fast we'll be travelling through space. She said that the rocket will be much faster - over twenty thousand miles per hour!

Twenty thousand! That's mega-fast. That's stomach-churning, brain-melting fast. Sometimes, when we're on the air tram, I play games to make the journey more fun. Today, I imagined that I was a space pilot, speeding through the galaxy. Outside the windows, stars and planets zoomed past, blurring into streaks of light. An alien spaceship approached with lasers beaming but I was ready to zap it into another dimension as soon as it got into range.



"Pow! Pow-pow-pow! Pow!"

"Oh Jazz, you're not shooting aliens again," said Mum as the other people on the tram stared. "We like aliens!"

I explained that they had us cornered in the outer spiral arm of a distant galaxy and that I had no choice.

Mum said that I should at least try to bring one back alive so that she could study it. That's what Mum does for a living. She's an extraterrestrial-life researcher — an alien scientist.

I performed a lightspeed U-turn to capture an alien fleeing the shattered spaceship in a life raft.

"Hmm," Mum said, pretending to investigate my captured alien. "It has bug eyes, seven legs, a spiky exoskeleton and liquid brains. This is like nothing I've ever seen before, Jazz. We could win the Galactic Discovery Prize for this."

"Do you think that's what the alien life on Mars will look like?" I asked.

Mum laughed. "I doubt that they'll have seven legs. In fact, I

doubt that they'll have any legs at all."

I spent the rest of the journey thinking about Martians with tentacles and suckers, and some that crawled over the ground like slugs. When the air tram finally got to Sunset Heights, we released our seven-legged alien back into the wild and hopped onto the platform.

Gran lives in one of those old-fashioned retirement villages from the 2020s: all glass and steel and curving walls. When she isn't racing her friends around the courtyard on her hover scooter or throwing street parties on weeknights, she's in her top-floor flat, gazing through her binoculars at the happenings down below or inviting people over for curry so hot that it blows your head off.

I could smell Gran's curry as soon as we got upstairs. Even before the front door opened, my eyes watered.

"My brave girls!" said Gran, throwing open the door. That's how she always greets us, even though we've never done anything as brave as she has — well, until now. Gran was wearing pink, fluffy slippers, khaki trousers and a dressing gown covered in parrots. "Off on an adventure to a new



world! What I wouldn't give to be coming with you." Gran said that she had made us a proper meal to send us off. "There'll be lean pickings in space," she said. "No cheese, no meat, no chocolate fudge cake..."

Mum pointed out that the technicians on Mars make good lab-grown beef, and I said that we'll eat insects because that's what they're farming out there.

"I've eaten plenty of insects in my time," said Gran. "They were delicious when deep fried in sweet-and-sour sauce. I'll send you my recipe, shall I? Did I ever tell you about the time when I ate toasted rhinoceros beetles in the Amazon rainforest?"

Gran always tells us stories of her youth, when she adventured to the most extreme corners of Earth. Every wall in her flat is crowded with photos: Gran as a young woman wearing a fur-hooded coat and pulling a sled across the Arctic snow; Gran relaxing in a hammock in the Amazon rainforest; Gran looking very tanned, riding a camel across the Sahara; Gran swimming with wild dolphins. I can't wait to have my own adventure, trekking across the Martian mountains, exploring caves and making campfires under the stars.

After curry, Gran gave us slices of chocolate fudge cake so gooey that it glued our teeth together. Then, it was time to say goodbye.

Gran hugged us in the hallway. "Write often, my ducks."

I pulled away and looked up at Gran's smiling face. I wanted to take one last good look at her — her crinkling eyes and giant smile. I could feel the corners of my mouth trembling.

Wiping tears from her eyes, Mum said, "We don't have to write." She was trying to be brave. I could tell because her voice was wobbling when she spoke. "We can just send you videos." This made me feel a little better. After all, I wouldn't see Gran again in real life for years.

Gran wasn't having any of it, though. She wagged her finger, pulling that wise-woman face that she's so good at. "You never know. Who can say what will happen when you're millions of miles across the universe? Once, my satellite map went berserk in the middle of the Himalayas and it took weeks for us to trek to safety! Technology doesn't always behave as it should when you are in the throes of an adventure... Oh, that reminds me — I've got a present for you, Jazz."



After fumbling around in her bag, Gran pulled out an object. At first, I thought it was a battered, old tablet — it was black and rectangular — but then, Gran opened it up.

It was a real-life, old-fashioned notebook with genuine paper inside! Tucked into the spine was a proper space pen, with real ink and absolutely no need for a battery.

I was gobsmacked. "A vintage diary and pen?" I gasped.

Gran said that the pen is designed specially for use in space and that there was no need to charge the book or back it up online. She said that I should write down everything that happens as a record for posterity.

(When I got home, I looked up 'posterity'. It means that what I write will go down in history as a record for future generations. Hello, future generations! It's me, Jazz! I hope that you're enjoying my Diary of Adventure. As you can probably guess, the diary that my gran gave me is the very diary that I'm writing in right this second.)

The last thing that Gran said before we left was: "Safe voyage, brave adventurers — and don't forget to pack a

spare pair of warm socks."

I told gran that I would miss her lots and I gave her one last extra-squeezy hug.

"I know, my duck," she said, "but that's what adventurers have to do. They have to leave people behind as they go off to discover new places and bring new knowledge to the world."

That's the sort of thing that Gran is always saying but it has never meant anything before now. I'm finally off on a real adventure, to a place far away, where everything is going to be completely different from what I know.

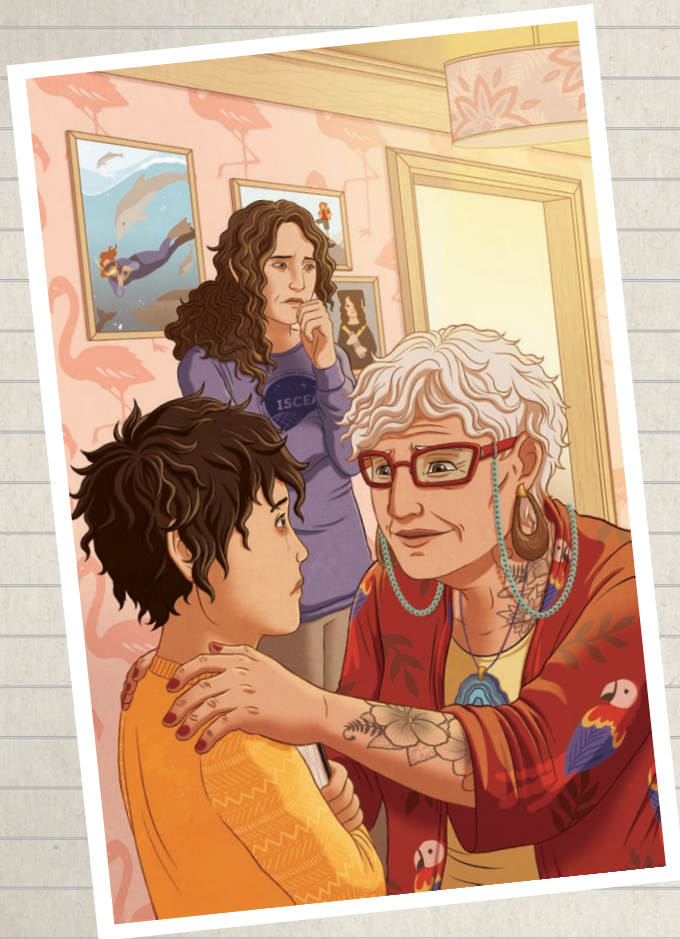
Mum is yelling and wanting to know whether I'm packed yet, so I'd better stop writing. We have a long journey ahead of us tomorrow to the Gviana Space Centre — we will have to get up very early to make it in time for check-in!

I have two silvery suitcases to fill up. Most of my luggage is clothes, clothes and more clothes. You can't do laundry on a spacecraft so we have to have enough outfits for the four-month-long journey. Not only that, but we're going away for



five years. FIVE YEARS! I might be inches and inches taller by the time we come back, so lots of the clothes that I'm packing are way too big for me.

Oh, and I mustn't forget warm socks!



### **ISCEA**

International Space Colonisation and Exploration Agency

### **HEADQUARTERS:**

Guiana Space Centre, Embershade, 0234-56689

### **Equipment List**

This document contains a complete list of everything that you should bring on your voyage to Mars aboard the Argo Spacecraft.

Please pack the following comfortable clothing, treated with antimicrobial solution:

- 6 × T-shirts
- 15 × exercise shirts
- 6 × trousers
- 15 × exercise shorts
- 8 × sweatshirts
- 20 × underwear
- 20 × pairs of socks
- 2 × shoes (to wear on Mars)
- 2 × exercise shoes

Please remember: clothes need not be changed often in space as pioneers exert themselves less as part of day-to-day activities. Antimicrobial treatment also ensures that clothes last longer before needing to be cleaned.

### **Banned List**

**NO** toiletries – washbags will be provided to all passengers, including a towel.

**NO** food – your meal plan has already been designed by the Argo's nutritionists with your needs in mind.

**NO** liquids or dusts – these could escape in microgravity and interfere with the workings of the spacecraft.

**NO** electronics – charging points are limited and there are no wireless networks in space.

Travel



## ALL SYSTEMS ARGO! THE SPACECRAFT BOUND FOR MARS



PUBLISHED 29<sup>TH</sup> MAY 2060 - 14:24PM

LEONA VENTURIS - SPACE CORRESPONDENT

The spacecraft 'Argo' launched this morning from the Guiana Space Centre in Kourou. On board the Argo are four crew and forty-six passengers.

The Argo launched at 05:00 local time on its third round trip to Mars. Space pilot Felicia Alba, 44, of Genoa, Italy, reported to the control centre fourteen minutes after launch to let them know that lift-off had been successful and that all passengers were safe.

The Argo is one of the first spacecraft to use fuel extracted from Martian regolith (loose soil) for the return journey, meaning that it can carry additional supplies to the colony. Passengers aboard the craft face a four-month voyage to the Marineris Valley colony. Once there, they will join the researchers, agriculturalists and architects already living and working on the Red Planet.

The Marineris Colony was founded in 2044 with the express purpose of creating a place on Mars suitable for human life. Since then, it has grown from a population of ten to over two hundred inhabitants and has been followed by the Lunar Resort on the Moon and the Gale Crater Colony, also on Mars.

Spacecraft heading for Mars can only leave when Earth and Mars are in certain positions in the solar system. Dr Otto Lundberg, an astronomer at the Guiana Space Centre, explained that "Earth and Mars orbit the sun at different speeds. Sometimes, they're close together but on other occasions, they're on opposite sides of the Sun. It takes a lot of money and resources to fly through space so voyages are calculated to be as short as possible between the two planets." This calculation means that voyages to Mars only happen at intervals of up to two years. Pioneers living on Mars usually stay for approximately five years, to make the most of their time and expertise, before heading home to Earth, though some colonists have elected to remain longer.

Passengers aboard the Argo will enjoy a gym, an entertainment complex and gourmet space food designed to meet their exact dietary requirements. It is the last taste of luxury they will get, however, as the Marineris Colony is over 80% self-sufficient. Almost all of the colony's food is grown in the colony greenhouse and its technology has been simplified so that any repairs can be made with the resources available. To protect the inhabitants from solar radiation and the freezing temperatures of Mars' surface, most of the colony is underground. Opportunities to leave the shared living space are few and far between.

Pioneers must undergo rigorous tests before they make the trip to make sure that they are physically and psychologically resilient enough to deal with the lifestyle of a Martian colonist. Passengers will be monitored closely after landing as they may suffer nausea and dizziness and their muscles may be weak after spending several months in microgravity.

After its voyage to Mars, the Argo will return carrying a small number of pioneers making their way home after five years on Mars.

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### Because you read this

Could microgravity cure baldness? Read more [here](#).

Are you Mars ready? Take our [quiz](#) to find out!





## CHAPTER 2:

Voyage to Mars



29<sup>th</sup> May 2060 (Earth calendar)

Dear Diary,

We're in space!

There are lots of weird things about living on a spacecraft. Here are just some of them:

1. There is almost no gravity so everyone floats. Instead of walking, you sort of swim everywhere. Luckily, we got the chance to practise gravity swimming in training once we had been selected for the voyage.
2. Because there's no gravity, there's no up or down. If you put something in the air, it just hangs in front of you. This makes things like washing and going to the toilet very... interesting.
3. There is no floor or ceiling. All the surfaces are walls and they're all crammed with useful things, like lockers and switches and screens.

4. Because you never really walk anywhere, you only wear shoes for exercise. It's a good thing that I packed my warm socks!

The scariest bit about travelling into space was definitely the launch. All the passengers had to wear spacesuits, which were tight and hot and hard to move in. Then, we strapped ourselves down in our cabins for lift-off.

I asked Mum why we had to wear the horrible, clingy spacesuits. This was the one hundred and ninety-fourth time that I had asked this question, but everytime I put the heavy, uncomfortable suit on, I couldn't help thinking that we were just being made to wear them as a sort of torture!

Mum was busy gazing at the equipment on the walls. "In case something goes wrong," she answered, clearly more interested in the spacecraft than my question, "like all of the oxygen leaking out of the ship or the temperature dropping to minus one hundred..."

Mum was not reassuring me at all.



The warning light in the cabin glowed red. We weren't allowed to unstrap ourselves until we were in space and the red light went out. We lay strapped down for ages, keeping completely still, sweating and waiting. Then, there was a roaring noise like the world was splitting apart.

The ship shook as we flew upwards. I scrunched my eyes tightly shut and held my breath. My skin felt like it was being pulled off my body and my stomach felt like I'd left it on Earth.

At first, it was like being sucked through a giant vacuum cleaner, but then, it got really scary. The lights were flickering on and off and I couldn't turn my head to see Mum. My seatbelt was squeezing firmly around my middle and my head started to throb. There was too much noise and too much shaking and I was way, way too hot.

Then, it all stopped. I blinked the sweat from my eyes and watched the warning light as it pinged off. The launch was a success!

Smiling, Mum floated across the cabin to help me out of my spacesuit.

"That's it! We're really in space!" she said, her bushy hair flying around her head like a lion's mane. My hair is much shorter than Mum's but it was still sticking out from my head like it was full of hairspray.

As soon as I got out of my spacesuit, I did a somersault and a backwards roll and a no-hands cartwheel.

After that, we explored the whole spaceship. There are lots of little cabins lining the corridors — some of them are living quarters and others are bathrooms. There is only one bathroom for every six people but these bathrooms aren't like the ones on Earth. To wash, you have to pour a bit of water onto a flannel and rub it on your skin and when you clean your teeth, you have to spit it into one of the air filters so that it gets sucked away and doesn't clog up the machinery.

For dinner, we ate food out of silver packets. The food isn't like food that we have on Earth — it all comes wrapped tightly in shiny packaging and looks like it has had all the air sucked out of it! It isn't too bad, though — in fact, I prefer the liquid salt and pepper that we get here to the stuff we have on Earth — it is much less messy!



After dinner, I was really tired. Mum said that her head was spinning so we returned to our cabin. Since there's no up or down, we have to strap ourselves to the wall to sleep. That's where I am now, strapped in my sleeping bag, writing with my diary leaning against the wall.

I can't wait to see what tomorrow has in store!

1<sup>st</sup> June 2060 (Earth calendar)

Dear Diary,

Mum is spacesick! It's a bit like seasickness and it will go away after a bit, but for now, she must carry a paper bag wherever she goes. Luckily, I'm perfectly fine.

Today, I made a friend called Elijah and I also met his little sister, Ellie-May. The way I met them was like this:

I went exploring and found all the other passengers gathered on the viewing deck. The viewing deck is a room with a big window which stretches around the entire ship so that you can stare out at space. Everyone was crowded on one side of it but I was able to swim through the crowd to get to the front because I'm small and have pointy elbows.

"Woah!" I gasped. I couldn't believe what I was seeing: Earth! The whole of it. Just a big, blue blob with swirling white clouds on top. One side was lit by the sun but the other side was totally dark. Not far away was the Moon;



it looked like a floating table tennis ball. It was out-of-this-world amazing!

That's where I met Elijah. His hair was too short to stick up everywhere and he was still wearing his pyjamas.

"Look - you can see Australia," he said.

I asked him where he was looking and he pointed towards Earth. There was a green blob on it that looked a bit like Australia, except for one thing.

"It's upside down!"

"No, we're upside down," he told me. "Or rather, there's no such thing as upside down when you're looking from space. People just decided that north should be up and south should be down and now we're all used to it."

I'd never thought of it like that before. While I was still trying to get my head around the idea, Elijah pointed at something else. "Look - the sun is rising over India."

I looked. Half of India was in the sunlight while the other

half was in darkness.

"Sunrise and sunset is really just Earth spinning in and out of the sunlight," Elijah told me.

I told Elijah that I knew about sunrise and sunset. I thought that he was being a bit of a know-it-all at the time but now that I know him better, I think that he just likes telling people facts.

I told him, "It's like Earth's a meatball on a barbecue. You have to keep turning it over so that it gets hot on every side." Elijah laughed and told me that mine was the weirdest explanation he'd ever heard - but not in a mean way.

Then, a little girl with her hair in pigtails swam over. She asked Elijah if he wanted to see how many forward rolls they could do without hitting a wall.

Elijah sighed. "Ellie-May, we've already played that game three times!" I could tell just from the way he said it that they were brother and sister.



"I know," said Ellie-May, "but I want to play it again. You can join in, too, if you like," she said to me...

...and that's how I made my very first space friends.



15<sup>th</sup> July 2060 (Earth calendar)

Dear Diary,

Elijah and I have been thinking about what Mars school will be like when we arrive at the Marineris Colony in three more months. Here are the ideas that we have so far:

1. The teacher might be a robot. They could have a screen for a face and a drawer in their belly that dispenses anything we need, like paintbrushes or glue sticks or ukuleles.
2. The chairs and desks will probably float around the classroom by themselves.
3. In maths lessons, we could learn Martian maths, which Elijah thinks will have lots of weird symbols instead of numbers.
4. In English, we might read fragments of Martian poetry that have been discovered by scientists exploring secret Martian ruins.



5. Best of all will be the science lessons! We'll all have our own spacesuits and a private Mars buggy and will go out on expeditions across Mars, looking for aliens and strange plants and Martian cave paintings.

We asked Ellie-May what she thought Mars school would be like but her only idea was:

6. Colouring for every lesson.

I can't wait to go to school. Only a few more months to go!

20<sup>th</sup> August 2060 (Earth calendar)

Dear Diary,

We've been on the ship for three months and we've been to the gym every single day.

On Earth, our bodies are always doing lots of work to keep us upright against the force of gravity. Since there's practically no gravity in space, our bodies don't have to work as hard. Instead, we have to exercise all the time so that our bones and muscles don't become weak and turn to jelly.

(Mum says it's not completely true that there is no gravity on the ship. Every object in the universe has its own gravitational field - including humans, treadmills and even tortillas - so there is a teeny tiny bit of gravity, only it's not enough to stop everything from floating around. It's called 'microgravity'.)

The gym has treadmills and exercise bikes and weights that you can move with your arms or legs. The treadmills are my favourite. To use them, we have to strap ourselves in, otherwise we bounce off it and go flying across the room.



Elijah and I tried it once, but we bounced too hard and hit our heads on the wall, which hurt a LOT. Now, we always use the straps like we're supposed to. Safety first!

I hold the current record for quickest running time out of the two of us but Elijah is better at cycling. "I'd beat you in a bike race any day," he told me.

"That's no good on Mars, is it? When the aliens are chasing after us, we're not exactly going to find getaway bikes just lying around, are we?"

That got us thinking about what alien bicycles would look like. Would they have lots of pedals for the Martians' many tentacles? Would they have handlebars or steering wheels or lots of levers? Would they have bells that go ding or sing songs or chime at a frequency beyond the reach of human hearing?

The spacecraft also has an awesome entertainment suite known as the Fun Zone. It is completely epic. It has these egg-shaped, squashy seats and electronic tablets where you can read any book in the universe. Then, there are giant screens with TV shows and games. My favourite game

is called Galaxy Racers, where you race spaceships along winding racetracks on dangerous planets, trying to avoid slime monsters and flying space pizza. Sometimes, we let Ellie-May join in and sometimes, I let her win on purpose because she's only five.

Another cool game is Alien Task Force, where you build up a squad of highly skilled aliens to go on missions to alien worlds. The missions mainly involve rescuing prisoners and investigating alien plants and animals by dodging guards and causing diversions. I'm best at Galaxy Racers - by far - but Elijah is completely amazing at Alien Task Force. He can bend his mind in ways that would confuse even Albert Einstein.

I asked Mum if we could help her on her mission to find alien life since we're so good at flying through space and rescuing alien lifeforms. She just raised one eyebrow and said, "We'll see."

I think that means yes.

The best game of all, though, is not even in the Fun Zone. It is a game that I invented myself at lunch today. It is called



The No-Hands Eating Contest. This is how it works:

First, you get a tortilla and put it in the air in front of you. It just floats there because there's almost no gravity to make it fall down. (We eat a lot of tortillas because they last for a long time, they're not as crumbly as bread and they're a bit like an edible plate. They're kept in special packets which means that they can last for eighteen months before they go off.)

Then, you open a packet of rice and spread it on the tortilla. You might think that the rice would fall off but it just sticks because of the microgravity thing.

Next, you add delicious things, like peas, spicy beans or chicken curry, which come in special foil packets from Earth. Finally, you fold the tortilla up and spin it around in the air. This bit's really weird because it looks like all the food is going to slide off your tortilla when it goes upside down, but it doesn't.

Once it is ready, you float in the air like a shark with your mouth open and say, "One, two, three - GO!" Then, you have to eat your tortilla without ever using your hands.

If little bits escape, you have to swim over and snap them up before they hit the walls - it's the most fun! The first time we tried it, Elijah couldn't eat his whole tortilla without getting food all over his face, and then I was laughing too hard to finish eating mine.

Ellie-May tried to join in, only she forgot about the no-hands rule straight away, which meant that she was instantly disqualified, since not using your hands is the ONLY RULE. Then again, she's only five.

We're going to do an experiment to see which is the easiest food to eat in space with no hands. Elijah thinks chocolate brownies but I think chicken strips. Whatever it is, I am sure that Elijah will end up with it all over his face!





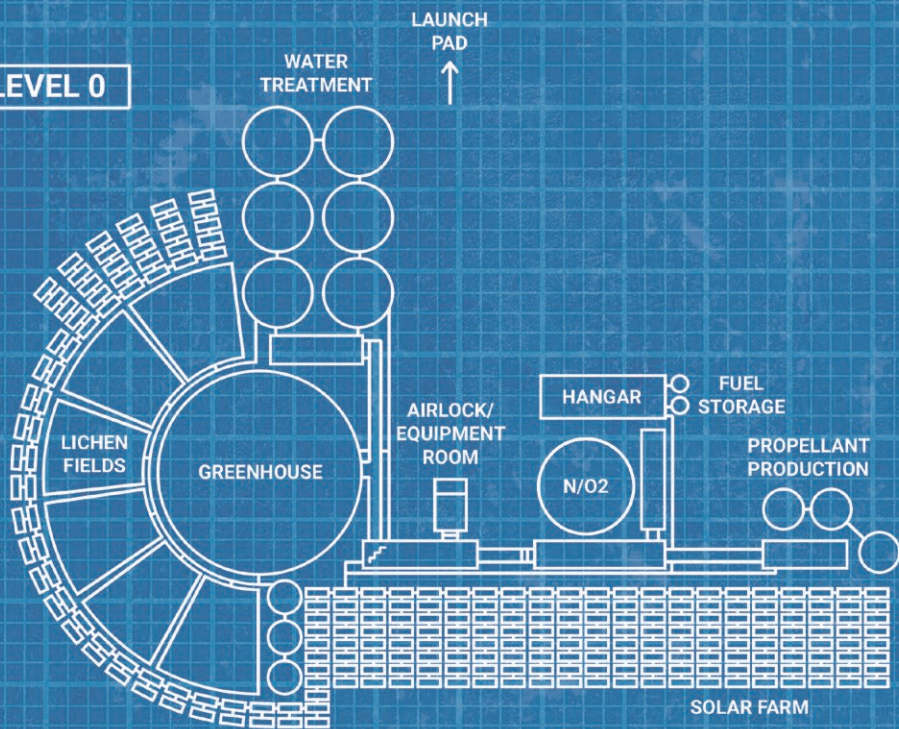
## CHAPTER 3:

Welcome to the Marineris Colony

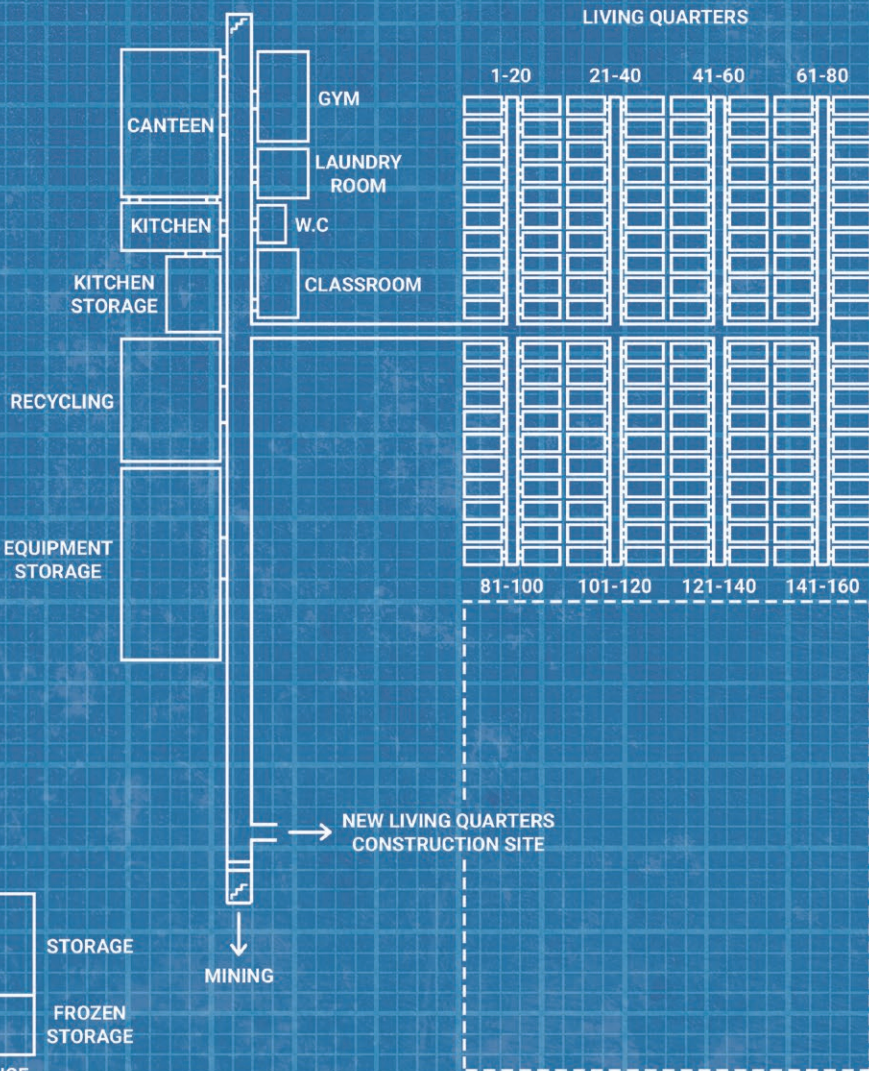


# MARINERIS COLONY, MARS 2060

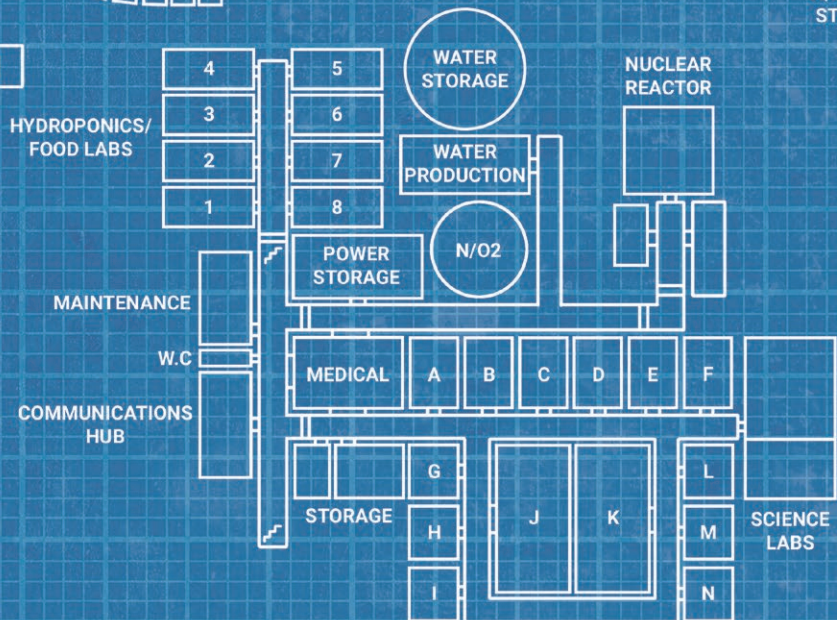
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## LEVEL -2



## LEVEL -1







MarsMail x



SpaceBook



ISCEA NEWS



https://www.mars.mail/inbox.html



INBOX (5)

SENT



SEARCH

Hello, ELLEN.SWEENEY19!

Tue 14 Sep, 11:44  
1 ATTACHMENT



From: JAZZ HARPER (jazz.harper@marsmail.com)

Subject: HI GRAN!

Dear Gran,

HELLO FROM THE PLANET MARS!

The Argo landed on Mars yesterday but I've been very busy since then so I haven't had time to write (I've just woken up from a sixteen-hour snooze). I wanted to do a video call but Elijah said, "Don't you know that it can take several minutes for signals to travel from Mars to Earth?" Apparently, if we tried to have a video call, I'd have to wait ages for my message to reach you and then wait ages *again* for your message to come back! I decided just to email instead.

Seeing Mars from space was literally 'out of this world'! It's red-orange all over — except for the poles, which are swirls of white

ice like how Earth's poles used to be.

Our colony is in the Valles Marineris. The Valles Marineris is a huge valley that looks like a great big scar along Mars' equator. Mum's told me all about it. At one end, you can see the wriggles in the ground where there used to be running water. There are caves in the valley walls, too, so it's the perfect place to find alien life. I wonder if the aliens have their own colony. They must be very good at keeping it secret or Mum wouldn't have needed to come out here to find them. I hope that they don't think we're here to attack — we come in peace!

The spaceship landing was even scarier than the launch. We had to strap ourselves into our spacesuits again and get shaken about as the rocket descended onto the landing pad. In all the training we did before coming to space, nothing prepared me for how terrifying it is to be trapped in a big tube plunging towards the surface of an unfamiliar planet.

That wasn't even the worst bit. As soon as the Argo stopped







INBOX (5)

SENT



SEARCH

Hello, ELLEN.SWEENEY19!

Tue 14 Sep, 11:44  
1 ATTACHMENT



shaking, I felt heavy. My arms felt heavy and my legs felt heavy. My fingers and toes felt heavy. Even my tongue felt heavy. My fingers were like big blobs as I tried to unstrap myself. The moment I was free, I fell over. Everything spun and I felt sick. I thought that I was dying. Then, I remembered our training. After four months in space, our bodies weren't used to up and down anymore. I needed to get used to gravity again.

A team of medics in skin-tight, blue Mars suits boarded the rocket to help us to disembark and reach the colony. We had landed a few meters away from the colony itself so we would have to walk the final stretch. As we staggered outside, I felt so woozy that I forgot to look around at Mars. Mum had it worse, though — she threw up in her space helmet. It was gross! I just staggered over the stony terrain towards the colony's airlock.

Once we were inside, crowds of people gathered to greet us.

They waved and cheered but the way that they moved about made me want to close my eyes. Thankfully, it wasn't far to the medical wing. The medics stripped off our spacesuits, took some recordings, cleaned Mum up and put us all to bed.

That's where I am now. It's so strange lying down on a real bed again after needing to be strapped to the walls to sleep! We have to stay here for a few days for observation. Apparently, the first few days are the most dangerous because our bodies aren't used to being on Mars yet.

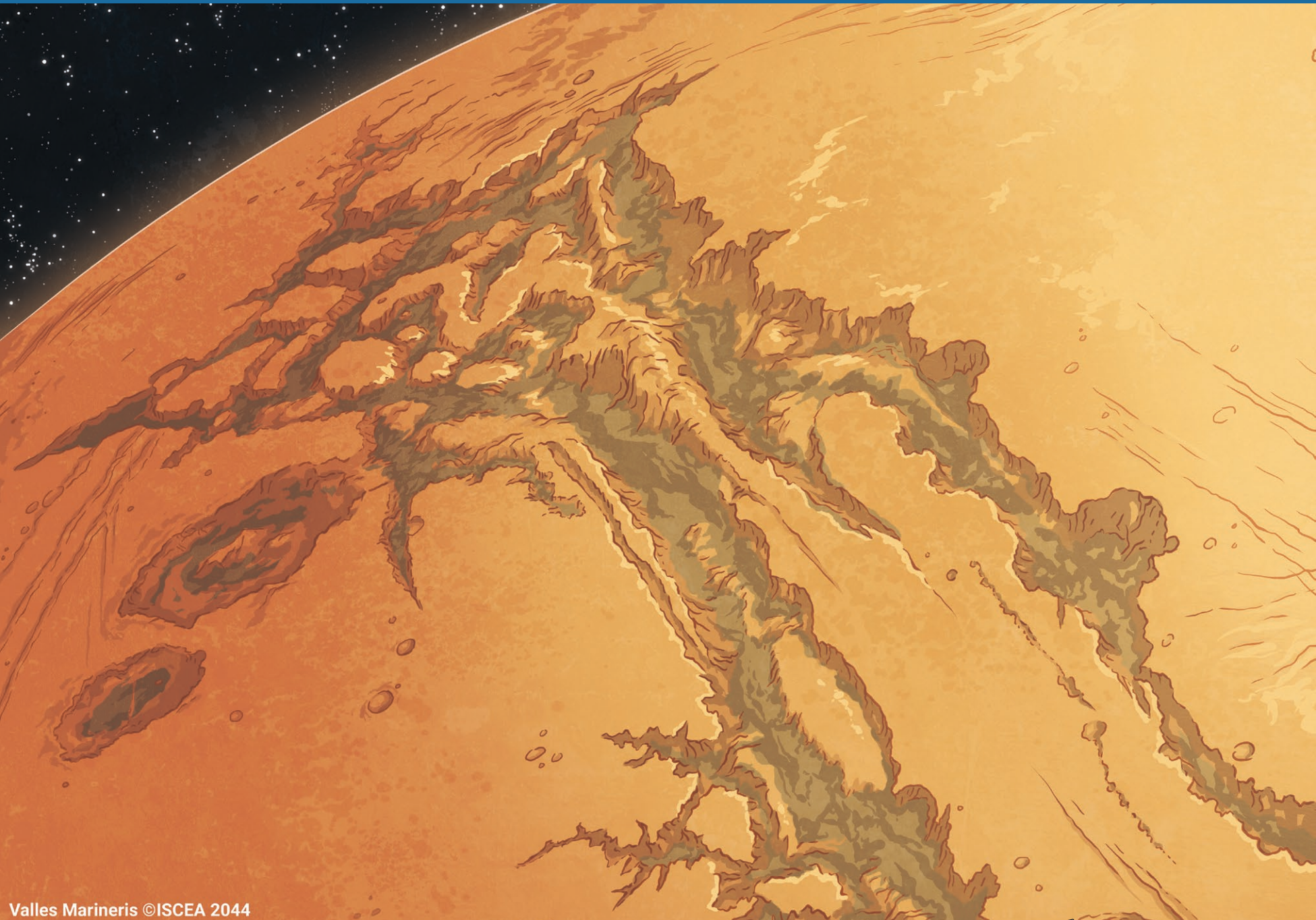
Soon, we'll get to see our actual new home and my new school, and Mum can start looking for aliens — it's going to be so much fun!

Lots of love,  
Jazz xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

P.S. Guess what? I am a whole centimetre taller! The medics told me that when I was being examined. Just imagine — by the time we come home, I could be even taller than you!







Valles Marineris ©ISCEA 2044





INBOX (2)

SENT



SEARCH

Hello, JAZZ.HARPER!

Wed 15 Sep, 09:00  
1 ATTACHMENT



**From:** ELLEN SWEENEY (ellen.sweeney719@marsmail.com)  
**Subject:** RE: HI GRAN!

My dearest granddaughter,

I'm glad that you've landed safely and that you are acclimatising to the local environment. Arrival is one of the most exciting yet difficult times in an explorer's journey! Part of you wants to run around and see everything but you don't know what dangers lurk in your new home. Be wary, take things slowly and always listen to the advice of those who know the terrain well!

Understanding the dangers in your environment is possibly the most valuable lesson that I learnt when I was exploring. Did I ever tell you about my 2031 mission to the Arctic? There were seven of us off to investigate the impact of climate change on the local fauna. None of us were used to such cold climes — this

was before the melting of the ice caps, you understand — and though we were equipped with the best snow boots, sun goggles and thermal underwear, we simply didn't realise what a hostile environment we were in.

On one occasion, we saw a polar bear with her cub not far from base camp. Of course, we were thrilled! This was exactly what we had come to see, but it was dusk; the light was failing and the temperature was dropping. Nevertheless, my colleague insisted on going to make some observations. She said that she wouldn't be long.

Well, after half an hour, we began to wonder...  
After forty-five minutes, we began to worry...  
After an hour, we decided that enough was enough. We tightened our boot buckles and stepped out into the cold night.

It felt like an age before we found her, though in reality, it was less than ten minutes. She sat in a snowdrift, still conscious but woozy, with one glove discarded on the ground nearby. Her bare







INBOX (2)

SENT

MarsMail

SEARCH



Hello, JAZZ.HARPER!

Wed 15 Sep, 09:00

1 ATTACHMENT



hand was like ice. When we arrived, she hardly recognised us — she simply asked us if we knew where her bunny had gone!

Despite the cold, she wasn't shivering. That's how we knew that she was succumbing to hypothermia. We rushed into action, carrying her back inside.

In the warm camp, the snow on her thermal layers began to melt so we replaced her damp clothes with dry ones. We wrapped her in blankets, particularly around her middle, head and neck. We knew that, though her hands and feet were the coldest, warming them too quickly could send her into shock. Instead, we gave her sips of heated water to gradually warm her from the middle out.

Thanks to our care, she recovered and didn't even lose any fingers to frostbite, though it was a near thing. That experience taught me something I'll never forget: one never knows what dangers lurk

nearby. That is why I urge you, Jazz, to take your time, go steady and learn about your environment before you go off exploring.

I miss you terribly and can't wait to hear all about your adventures when you come home.

Have fun on Mars, my duck, and watch out for aliens!

All my Love, Gran xxx

P.S. Give your mum a hug from me.

 ATTACHMENT: EXPLORERS.JPG



Sol 41, Mars Year 57

Dear Diary,

Whoops! I've been so busy landing on Mars and being monitored by the medical team (in case I accidentally turn to jelly) that I forgot all about writing in my adventure diary. There is so much to describe that I don't know where to start!

I guess that I should really start with the most amazing thing: the colony toilets. They're real toilets, which you can really flush. They have proper seats — like the ones on Earth — rather than just a hole in a teeny plastic frame and you don't need to worry about floating away! I can't explain how much I've missed real toilets.

Then, there's the gravity. The gravity on Mars feels as if it's not really trying. Elijah says that it's because it's only around 40% as strong as Earth's gravity. If you throw something up, it always takes longer than you expect to fall back down. Thanks to the gravity, though, I can see that my hair has grown quite a lot since leaving Earth. When it just floats around your head in space, you hardly even notice

it, but now that gravity is pulling it back down, I have to keep on brushing it out of my eyes! I can't wait to get it all cut — perhaps they will have special Martian stylists who can give me a cool alien hairdo!

We've been here five sols now. A sol is like a Mars day, only Martian sols are thirty-seven minutes longer than Earth days because Mars takes twenty-four hours and thirty-seven minutes to spin on its axis.

"Did you know that Mars years are longer, too?" said Elijah as we were lying around in the medical bay feeling bored.

I told him that I did know, actually, because it was in the training but this didn't stop Elijah. As I said, he just likes telling people facts.

"But did you know that they are nearly TWICE as long as Earth years?"

"Yes."

"It's because Mars takes nearly twice as long to orbit the sun as the Earth does," he rambled on.



"Yes, I know."

"I bet you don't know why it's the year 2060 on Earth but on Mars it's the year 57."

He was right, there. I didn't even know that it WAS the year 57 on Mars. "How come?"

Elijah's face goes all happy and animated when you ask him to explain facts. "In 1956, before humans had ever been into space, scientists noticed a large dust storm on Mars. When they started sending spacecraft to explore Mars, they decided that Mars needed its own calendar. They picked the year of the dust storm to be year 1 and kept counting up from that."

Now that I know about Mars' calendar, I've decided to record the date in my diary in Mars years instead of Earth years. After all, I live on Mars now.

Yesterday, the medics told us that our bodies had FINALLY got used to the idea of gravity again so it was safe to go on a tour of the colony. It's HUGE. We saw the oxygen plant and the water treatment facility, which are outside

on the surface and connected to the rest of the colony by corridors. We also stopped for a moment at the greenhouse but I barely had time to take in the jungle of plants and trees before we were off again. We loped down these long, gloomy hallways until we were deep underground.

Most of the colony is underground to shield us from the sun's radiation, since Mars doesn't have a protective atmosphere like Earth does. We saw the bustling labs, heard the clang of dinner cooking in the canteen and stopped by the communications room to see where we could read and send mail.

By the end of the tour, I was getting used to the strange way in which you have to walk on Mars. Basically, you have to walk more slowly than on Earth and you bounce a bit — you move just like an excited puppy! Running is fun, too, because you bound up and down with each step. It's a bit like running on a trampoline.

At the end of the tour, we reached the living quarters. They're set right back in the rock of the Valles Marineris, furthest from the sun's glare. It's like living in a giant, underground hotel... without room service. There are lots



and lots of numbered doors and behind each door is a little flat where someone lives with their flatmates or family. Ours is number 140 and Elijah's is number 152, which is only round one corner.

The living quarters are very small, very plain and, of course, there are no windows, but we soon made it feel like home. Mum brought our favourite blankets from home and she had printed out some pictures of home to hang on the walls. There's a photo of my last birthday when Gran made the biggest chocolate fudge cake and Mum filled our house with star-shaped balloons. There's a photo of Gran on her scooter, riding through Sunset Heights. She's wearing her explorer gear and she looks like she's on a safari, but the only wildlife in sight is a puzzled squirrel. There's a photo of me and Mum on the beach. Instead of sunbathing, we went to explore the caves and rock pools. On that day, I found two sea anemones, six sea snails and a tiny, green crab.

Once we'd finished decorating, we went to the canteen for a meal of algae stew and fried cockroaches, which was surprisingly delicious. I had only just started to feel hungry again. Since arriving here, my stomach had felt really funny and the medic said that our digestive systems had to get

used to the weight of themselves again after floating around in space for so long. Then, Mum took me to the greenhouse. She said that there was something that she wanted to show me.

The greenhouse on Mars isn't like the greenhouse at the bottom of our garden on Earth. It's a big glass dome which stretches in every direction. There are rings of vegetable patches covering the ground, growing almost all the food that we eat on Mars. It's the closest thing the colony has to a park.

We went right to the edge of the greenhouse, where we could stare out of the glass onto the Marineris Valley, which stretched away to the horizon.

It was beautiful.

The land was all flat and dusty, and we could see for miles. The soil was a burnt orange sprinkled with pebbles, rocks and boulders. Here and there, dust was quickly whipped into the air then suddenly dropped back down to the floor. In the distance, I could make out the tips of the coppery mountain peaks. The sky was a deep red-orange and the



ridges of the valley walls cast dark shadows.

"Woah!" I gasped. "This is the most beautiful view I've ever seen!"

"Just wait," Mum smirked.

That's when I saw something unbelievable.

The sun sank in the sky. As it got lower, something wonderful started to happen. Everything changed colour...

The fiery sky was washed away and replaced by a deep blue. It reminded me of watching waves running up the beach back home on Earth. Within a few minutes, almost the whole sky was lit by a blue light.

Mum grinned at my shocked face and explained that Mars' sunsets are blue because of the thinner Mars atmosphere and the dust particles. It even made the sun look pink.

I snuggled up to Mum. It was all so incredible.

After the sun had completely disappeared, we went home.

Mum says that I need to get a good night's sleep but I don't know if I can - I'm much too excited. Tomorrow is my first day of Mars school!







## CHAPTER 4: Minor Emergencies



Sol 42, Mars Year 57, 1:59 a.m.

Dear Diary,

It's the middle of the night but I can't sleep! I'm too excited about starting Mars school. I've already tried to sneak out of the flat to visit Elijah but when I got there, his door was locked. Since there are no webspectacles or phones on Mars, I couldn't even call him to let me in.

Instead, I turned to go home. The corridors were deserted and the lights flickered dim blue. My footsteps echoed as I shivered down the hallways. It is only when you are alone — really, properly, 'everybody else is asleep' alone — that you start to realise where you are. I was underground, on a strange planet, far away from my real home.

I started to worry. What if the colony wasn't safe? What if there were aliens hiding just beyond the valley waiting to gobble us up? What if everyone else in the colony had mysteriously vanished and it was just me, alone with my echoing footsteps?

I was so scared that when I got to the corner between

Elijah's corridor and mine, I stopped. I was sure that I could hear deep, hissing breaths and strange slurping noises. Before I could stop it, my brain had conjured an alien: big and purple and oozing, with one enormous eye. I wanted to scream. I wanted to run. But I was frozen to the spot.

Then, a long way off, I heard a BANG!

I jumped and dashed round the bend and in through the front door. As soon as I got inside, I could hear Mum snoring and I stopped being scared. I went straight to bed.

I still don't feel tired, though. I've decided that, if I don't get to sleep soon, I'm going to find my explorer hat and my warmest socks and go looking for the alien that I DEFINITELY heard. After all, explorers can't afford to be scared. They have to face their fears with courage and determination.

Also, how cool would it be to be the first person ever to discover an alien on Mars, the night before my first day of Mars school? I'd be a hero! There would probably be a celebration in my honour — with cake — and everyone would want to be my friend. The teacher would ask me to come



to the front and teach a lesson about how to be a brave explorer. Then, in science, we'd write observations about the alien's behaviour and in English, we'd write news reports to send to Earth and

7:00 a.m.

Oh, no. It looks like I fell asleep in the middle of a sentence and I can't remember what I was going to write. Not only that, but Mum says that I have ink on my face - on my very first day of Mars school! This is so embarrassing.

Sol 42, Mars Year 57, 5:00 p.m.

Dear Diary,

School was not at ALL like I had expected! I don't know how I'm going to survive on this planet if it carries on this way.

First of all, the classroom was the most uninspiring room in the entire world. It had grey walls and grey desks and grey chairs and an actual, old-fashioned interactive whiteboard. At first, I thought the board was cool, like going back to Victorian times or something like that, but then I realised that the lessons were like Victorian lessons, too.

What was even more upsetting was the teacher. She is not a robot with a drawer in her belly for felt-tip pens and glue sticks. She's a human. She's called Ms Kay. She wears a beige cardigan and tan trousers and a taupe shirt. She's VERY dull.

There are sixteen children in the class and they are all different ages. Ellie-May sits at the little table at the front with the little children. The big table at the back is just for teenagers. Elijah and I are on the middle table.



"Letitia's been here the longest," said Ms Kay, pointing to a tall girl with ginger hair. She was sitting at the middle table, too, but she looked a year or two older than me.

"I'm sure that she'll be happy to help while you're finding your feet."

Elijah and I greeted everyone as we sat down. Some of them answered back but Letitia didn't even smile. She just folded her arms and scowled.

"You've got writing on your face. Did you know that?" she asked me.

I tried to explain that I had been writing about aliens when I had fallen asleep, but she didn't care.

"You could have washed it off, couldn't you?" she sneered. Letitia didn't seem like a very helpful person, whatever Ms Kay said.

In our maths lesson, we didn't learn Martian maths. We just did ordinary maths using Earth numbers. Elijah said that the questions were too easy for him but Ms Kay said that he had to do them anyway. In English, we read a bit

of an Earth story and then we answered questions in full sentences. I asked if we could read some Mars poetry in the next lesson. Ms Kay gave me a sharp look, like she wanted to pin me to my seat with her eyes. She just said, "Don't be ridiculous."

I didn't mean to be ridiculous. I just wanted to know.

The most exciting thing happened just before lunchtime. Suddenly, in the middle of checking that all Elijah's sentences had capital letters and full stops (which they did, of course, because Elijah is better at English than Shakespeare), an alarm went off. It was so loud that I wrapped my arms over my head. A red light that I hadn't noticed before flashed and lit up the room.

I sprang from my seat, ready to run for the door. There was probably going to be an explosion or an earthquake, or else a tentacled alien was rampaging through the corridors, or an army of Martians was advancing towards the colony! We had to equip ourselves! We had to fight! We had to flee!

However, none of the other children seemed bothered. Ms Kay gestured at me to sit down. She looked at a message



scrolling across an LED display behind her desk.

## BIO LAB COOLER FAULT - ELECTRICAL ENG TO BIO LAB

Moments later, the siren stopped and the light went off. The lesson carried on as if nothing had ever happened.

"What was that about?" I whispered. "Why aren't we doing anything?"

Elijah frowned.

"Cooler fault?" I continued. "Surely Mars is cold enough already. And what's an 'electrical eng'?"

Letitia rolled her eyes. "It's short for 'electrical engineer'. And we do need coolers, actually - the samples in the labs need to be kept at exactly the right temperature. You two obviously don't know ANYTHING about Mars."

"I do, too!" I objected.

"I got 99.8% on the Mars Knowledge Test," Elijah added.

"It was part of our training. And I've read five and a half books about Martian rocks and minerals. The half was because I realised that the book was too easy."

Letitia didn't seem at all interested in listening to us. The morning passed by very, VERY slowly.

In the canteen at lunchtime (where they were serving lab-grown meatballs and mashed potato), I looked for Mum to ask what the alarm was about but she was nowhere to be seen. Elijah's dad was eating at the next table so we asked him instead.

"That's the minor emergency alarm. There was a fault in the biology laboratory - a broken cooling system. Your mum will be busy assessing the damage all day, I expect."

In the afternoon, we had a practical lesson. Organising the class, Ms Kay announced that the little table would be going to the kitchen and the middle table would be going to the equipment room. The big table were staying in the classroom to do geography.

Everyone on the middle table, including me and Elijah, stood



up and headed for the classroom door. Our group left; Elijah dithered in the doorway.

"Go on, Elijah," said Ms Kay. "The others will show you where to go."

As we bounce-walked down the corridors, Elijah was clearly moping. "I was looking forward to geography," he told me. "It's my favourite subject. Do you think they'll be doing fieldwork on the surface of Mars?"

Letitia laughed. "Haven't you ever done a geography lesson before? We don't do fieldwork - we just read facts in textbooks. As if they'd let us kids go out onto the surface of Mars!" she jeered.

After that, Elijah looked REALLY miserable.

The equipment room was a long way away, down the long tunnels to the outside part of the colony. A stern man was waiting for us. He wore khaki all over, as if he were in the army, and he had a very neat moustache.

"Right, recruits. Today, I'll be showing you how to clean the

spacesuits," he said.

"Do we get to try them on?" I asked.

"Maybe - if you get your work done quickly," said the man, with a grin.

Mars spacesuits aren't like the ones that we wore on the spacecraft. They're made of a blue, stretchy material and, when they're not being worn, they look like tiny wetsuits with hands and feet. There are big boots to wear on top, built to withstand the tough Mars landscape. The boots have thick soles and leather straps. The helmet is made of dark acrylic sheet and rounded, so it looks a bit like the head of an alien from one of those old movies. There's a network of speakers and microphones so that you can speak to other people and hear what they say back, just the same as if you weren't wearing an airtight suit.

Each suit has an electronic pack that hangs over your shoulders and attaches at the front and back. It's really heavy but it's also really important because it extracts oxygen from the Mars air and regulates your temperature. If it's really sunny, there's a silvery poncho thing that you can wear



on top which reflects the radiation and keeps your spacesuit from disintegrating.

Somebody asked why the sunlight was more dangerous on Mars than Earth; after all, Mars is further away from the Sun than Earth is. I told them what Mum had said about the atmosphere. Turns out that I (well, she) was right! Mr Movstache said that, because there is less atmosphere here to protect us, the sun could do more damage. Even Elijah was impressed that I knew that!

Our job was to 'maintain' the suits. Elijah panicked and said that there was absolutely no way that we should be doing this job because Mars dust is toxic and we would be in danger. Mr Movstache told us not to worry because the suits had already had their first clean and we were going to be given special masks and goggles to wear while we gave them their second clean. I can't think of anything that really needs two cleans, so I thought that the whole activity was a bit pointless. I wasn't going to say that, though, because I REALLY wanted to be allowed to try one on!

The first job that we had to do was brushing. We brushed the spacesuits clean of leftover particles of red Mars dust,

including all the elbow and knee joints and spaces between the fingers. Then, we dusted the helmets until they didn't have a single smudge on them.

If we found anything that didn't look right, like cracked rubber or a loose wire, we had to tell Mr Movstache straight away (he did tell us his real name but I forgot it).

"We always check the suits thoroughly before any mission but the earlier we can spot problems, the sooner we can fix them," said Mr Movstache, marking some cracked rubber that I'd spotted with yellow tape so that it could be mended later.

We each cleaned three whole spacesuits. Once I'd got my last pair of space boots gleaming, I proudly presented them to Mr Movstache.

"May I try it on, now?"

He wriggled his movstache from side to side as he inspected my work. I held my breath. What if I'd left a smudge or a smear? After a moment, he smiled.



"Excellent work, recruit. Now, let's get you into that spacesuit."

The spacesuits take AGES to get on. The blue rubber isn't just skin-tight, it's practically bone-tight. My legs and arms and middle felt completely squashed and squeezed about.

When I put on the space boots, the electronic box and a silvery anti-radiation cape, I felt like a superhero. The last thing to go on was the helmet.

I stood in the middle of the equipment room with my hands on my hips. Everyone gazed at me, probably really impressed. In my mind's eye, the silver cape flapped behind me on the Martian breeze.

Then, I heard a spluttering noise. I spun round to see Letitia stifling a giggle.

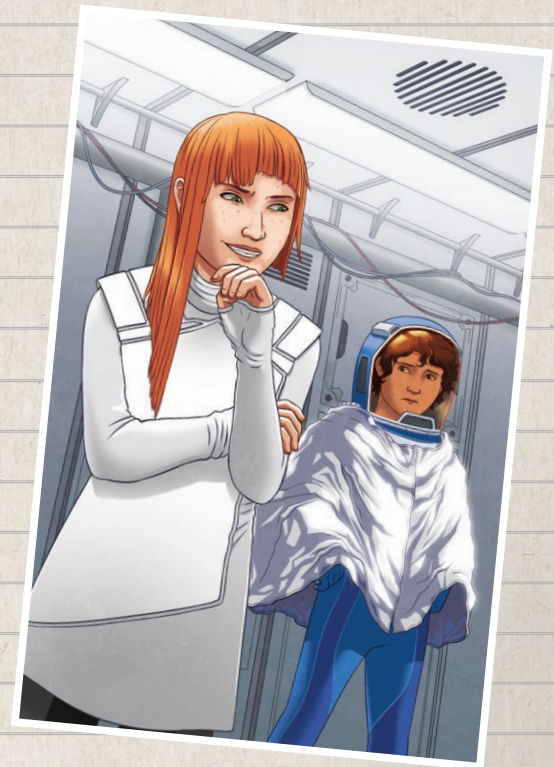
"I'm sorry," she said, though I could tell that she wasn't, really. "It's just... you look a bit like an insect."

"Everyone looks strange in Mars suits, Letitia," said Mr Moustache.

"We'll all have to wear them if we want to go out rock-collecting," said Elijah.

At that, Letitia snorted. "Yeah, right. As if YOU will ever be allowed out of the colony."

It was a shame because, until then, it had been a fun lesson. Now, I am dreading going back to Ms Kay and having to spend another day with that meanie, Letitia.







## CHAPTER 5:

### First Expedition





INBOX (1)

SENT



SEARCH



Hello, ELLEN.SWEENEY19!

Tue 21 Sept, 10:00



From: JAZZ HARPER (jazz.harper@marsmail.com)

Subject: RE: RE: HI GRAN!

Dear Gran,

Thanks for your email. I would like to tell you that being on Mars is simply marvellous. I would LIKE to tell you that... but I can't.

You'd expect Mars school to be fun, wouldn't you? The planet is extraordinary, after all! Well, here are all the ways in which it's utterly tedious:

1. We do maths on old-fashioned tablets, like we're in the 2010s. This was interesting for about five minutes and then I worked out why we don't do maths and English like that anymore. Elijah asked if we could calculate how far it was to Olympus Mons and how much fuel we would need for the journey there and back, but Ms Kay said, "Don't be ridiculous."

2. In geography, we don't learn about Mars. We learn about directions. That is it — plain, old, boring directions that I learnt in year 2 on Earth! Ms Kay said that it was important that we could identify north, east, south and west because compasses wouldn't work on Mars. What is the point in learning about directions if we never actually GO anywhere? Elijah asked if we could learn about Olympus Mons because it's the biggest volcano in the solar system and it's right here on Mars. Ms Kay just said, "Don't be ridiculous."
3. In technology, all we do is learn how to sew so that we can make our own clothes. It would be fun if we actually got to DESIGN our own clothes but, instead, we just make the same beige T-shirt again and again. Ms Kay says that if we're good, we might get to make beige trousers, too. Woohoo... not.
4. In PE, we clear the classroom and do aerobics. That is it. We never play football or dodgeball or netball or tennis.
5. I thought that science would be fun but all we do is listen to





INBOX (1)

SENT



SEARCH



Hello, ELLEN.SWEENEY19!

Tue 21 Sept, 10:00

perfectly normal. We have to put up with her every day at school because there are so few children on Mars that we're in every lesson together. I wish that she would zoom back to Earth and never bother us again. Please send help, before I run away with the Martian circus!

I miss you.

Hugs and kisses,  
Jazz xxxxxxxxxxx



Ms Kay reading science facts from a book and then we write down what she says. This week, she told us all about single-celled organisms, which are teeny tiny little creatures that can't even think. I asked her if we could learn about Martians instead, but she just said, "Don't be ridiculous." Elijah asked if we could do experiments with gravity, but Ms Kay said — well, I think that you can guess what she said.

6. Sometimes, an emergency alarm goes off, but we never get to help with the emergency because we're not grown-ups.

Even Elijah (he is my very best friend, by the way) thinks it's boring, and Elijah is more of a goody-goody than Florence Nightingale! You'd like him, Gran.

Worst of all is this HORRIBLE girl called Letitia. She's always sneering and making fun of me and Elijah, even when we're being







SpaceBook



MarsMail x



https://www.mars.mail/inbox.html



INBOX (0)

SENT



SEARCH



Hello, JAZZ.HARPER!

Wed 29 Sep, 13:25



From: ELLEN SWEENEY (ellen.sweeney19@marsmail.com)

Subject: RE: RE: RE: HI GRAN!

Dearest Jazz,

You've discovered two of the great secrets of exploration.

Firstly, you sometimes have to put up with people who are *very* unpleasant. Just remember that their unpleasantness is their problem, not yours. It won't make them any friends in the long run and it's no good letting their bad attitude spoil your good time. I once made the mistake of trying to get my own back on a particularly unpleasant project leader by feeding her a cocona fruit that was well past its best. After that, I not only had to put up with her unpleasantness, but we also had to make constant stops for her to run into the jungle as she had to `go`!

Secondly, in between the moments of exhilaration and discovery,

there is boredom and even drudgery. Imagine canoeing down the Amazon for a month. Yes, we fought alligators, feasted with indigenous tribes and drank coffee brewed from beans we'd picked ourselves, but each day, we paddled for hours and hours. Just imagine — the same brown water drifting by, the same trees nodding on either bank and nothing but grey sky above. We had to invent our *own* fun.

Jazz, you're a resourceful girl. You have the whole of Mars at your fingertips and a new best friend to boot.

I can't wait to hear all about your next adventures!

All my love,

Gran xxx





Sol 82, Mars Year 57

Greetings, Jazz's diary!

This is Elijah, reporting for duty. What follows is a true and faithful account of the events of yestersol. Jazz proclaims that she is 'so fed up' with life on Mars that she 'can't stand to write about it anymore', but I think that her diary is an important log that will benefit generations to come. Jazz said that if I was so bothered, I should write in it. So, here I am.

Firstly, I should explain how yestersol's incident came about. For many sols, Jazz and I have entertained ourselves with the limited resources available. Jazz calls it 'making our own fun'. We learnt every card game under the sun, but Jazz hates card games because I always win. Next, we tried to write our own story in the communications room but Jazz said that it made her sad that she had to write about imaginary adventures instead of having real ones. Now, I am finishing the story on my own. (If you're the sort of person who enjoys stories about time-travelling wizards on a mission to save the universe from a sentient black hole, you should definitely read it!)

We also played old-fashioned games, like 'I Spy', but there's only so long you can keep pretending that life is just a really long car journey.

Then, we went to the greenhouse. Sometimes, we go there to play clapping and skipping with Ellie-May or to stare out at the surface of Mars. Jazz looks for aliens and I count rocks. However, if Letitia is there, we turn around and go somewhere else instead.

Today, Jazz wanted us to go to the greenhouse and pretend to be Mars explorers. We didn't see Letitia at first. We were too busy ducking around the broad bean patch, hiding from the alien police who wanted to capture us.

"What do you think you're doing?" asked Letitia, appearing right where the alien police were supposed to be. We both jumped. (Note from Jazz: No, I didn't.)

I explained to Letitia that we were playing Mars explorers, but Jazz kicked me so I guess I shouldn't have said anything.

Letitia rolled her eyes. "You two are so weird. Why don't you do a proper expedition around the colony or something?"



"We HAVE," said Jazz. "We're in the greenhouse, aren't we? We've been to the canteen and the communications room and the gym... They're all pretty boring."

"Wow." Letitia folded her arms. "You know that there's more to the colony than that, right?"

"Of course we know!" Jazz was nearly shouting.

I calmly explained that I was pretty sure that we were not allowed anywhere else.

"Who says?" said Letitia. She strolled back to her giggling friends.

Jazz spun round to me and hissed, "I hate her. C'mon, let's go and find somewhere new."

My mouth hung open. Then, I reminded Jazz that we were not allowed.

"Who says?" said Jazz.

"Well, no one, but -"

"So, let's go." Jazz grabbed my arm and we bounce-walked out of the greenhouse.

The thing was, I REALLY wanted to explore the colony properly with Jazz but I couldn't get rid of the niggly feeling that Letitia was trying to get us into trouble.

First, we went to the deepest, darkest, rockiest places where my dad works, building new homes for future colonists. When we arrived, there was a barrier up and, beyond it, flashing lights and people in hard hats. I couldn't see my dad so the people working there kindly showed us the drill that they were using and we even got to borrow some ear defenders so that the noise wouldn't deafen us. We were watching them bore a hole into the wall - chunks of molten rock flew in every direction - when Dad showed up. He said that it wasn't safe and that we shouldn't be bothering the other workers; he didn't want to see us there again. I didn't even have time to snatch a rock fragment as he hurried us away.

After that, we tried to go to the oxygen plant but there was a secret code to get in. It was the same at the water treatment facility. (I didn't want to go there, anyway - the stench makes me want to vomit - but Jazz says that dealing with disgusting things is part of being an adventurer.)



Next, we went to the labs. It was all Jazz's idea. She said that we could ask her mum to teach us some real science.

I love real science. My dream is to be a space volcanologist and to study volcanoes on different planets. At home, on Earth, I have a huge collection of rocks and magma samples but Dad said that I couldn't bring it all to Mars as there wasn't room in my luggage, so I've just brought my two favourite rocks: a lump of garnet peridotite and a polished pebble of unakite. I was hoping to add some basalt from Olympus Mons to my collection but it looks like that might never happen.

"Do you think they've got aliens in there?" asked Jazz as we approached the lab. "Maybe they've captured one already but they're keeping it a secret. Maybe that's why they keep having emergencies but won't let us help."

There was a code on the lab door, too, so Jazz pressed the buzzer and asked to see her mum. When her mum came to the door, Jazz said, "Elijah and I were just talking about how we wanted to see some real science in action. Can we come in and watch you do experiments, please?"

"I suppose it can't hurt," her mum replied. "That's my bench, over

there. I was just fetching a sample from the refrigerator. Don't touch anything until I'm back, OK?"

The lab was lit with bright lights. Scientists stood in white coats and goggles beside metal benches. Around the room were mysterious, labelled samples that looked like moon dust or swirling fog. There were bubbling test tubes, hissing machines and flickering gas burners. Best of all, Jazz's mum had a big lump of Martian rock sitting on her lab bench.

I began to inspect the rock from every angle - I could tell that it was Martian rock from the fiery orange colour, but there was a white vein running through it. Jazz nudged me as I was inspecting the sample. Her eyes bulged and she tilted her head toward the chattering scientists on the other side of the lab. I stood completely still as we strained to listen.

"There are three candidate caves," said one scientist, "only thirty or so kilometres away."

"That close?" said another.

"Yes. We're planning an expedition next week."



By now, Jazz's mum had emerged from the metal door. She paused by the chatting scientists to join their conversation.

"What's this about an expedition?"

"They think that they've located a promising site for alien life," said the first scientist. "I'll be heading out next week."

"Won't that be something!" said Jazz's mum. "I'm so jealous – just think about it, you could be the first ever person to retrieve extraterrestrial life."

"Well, we don't know if we'll find anything..."

Jazz's eyes were wide and her mouth was a teeny-tiny 'o' shape. She started to duck and dive around the lab tables, an invisible stun gun held out in front of her, completely lost in finding imaginary aliens. She crept around a stool, ducked into a forward roll across the floor and –

I hissed at her to be careful. I was too late.

She slammed right into her mum's lab table. The Martian rock teetered and tumbled off the edge –





SMASH!

The rock cracked into fragments that spun across the floor.

The scientists surrounded us in seconds.

"What was that?"

"Is anyone hurt?"

Jazz's mum marched over with hands on her hips. Her boots crunched in the rock dust. "Both of you! Out! NOW!"

We ran from the lab faster than if there were actual Martians chasing us. When we reached the safety of Jazz's bedroom, we were both shaky. I've never seen Jazz's mum that angry before. Jazz should have known that she wasn't being sensible in the lab. Something was bound to go wrong.

I don't think that we'll ever be allowed back in. I don't know what I'll do about my career as a volcanologist if I can't ever go inside the labs...

Jazz says that she wants to write, now, so I'll let her take over.

Hello.

I want it on record that it's NOT FAIR. We're on Mars - MARS! A cold, red planet orbiting the sun! A planet that humans hadn't set foot on until twenty-five years ago and hadn't lived on until seventeen years ago. Now, we're here and we're not even allowed outside - not even to see the dust storms. We're not allowed to help the researchers and we're not allowed to see the tunnels going back into the rock. Mum's always going on about being curious and Gran's always going on about being brave, but when I try to be curious and brave, what happens? We get yelled at! Why bring us here in the first place?

Sincerely yours and very disgruntled,

Jazz Harper

P.S. Elijah didn't tell you that his rocks have names. They're called Penny Peridot and Kenny Unakite.





## CHAPTER 6:

### Vital Equipment



## NOTICE TO ALL MARINERIS COLONY RESIDENTS

Sol 99, Mars Year 57

This is a reminder that all equipment within the colony is of the utmost importance to our survival and is exceedingly difficult and costly to replace. If a heater is broken, a cooling system fails or a beaker gets broken in the lab, shipping replacements from Earth can be costly.

As such, all high-energy activities are discouraged except for when using gym equipment. Please refrain from running, throwing, kicking or dancing in any room containing valuable equipment. The survival of the colony could, quite literally, depend upon it.

Sol 100, Mars Year 57

Dear Diary,

I'm grounded.

I'm not allowed anywhere except home and the schoolroom where Ms Kay or Mum can accompany me.

What does 'grounded' mean, really? Does it mean that you're planted in the ground like a potato? Does it mean that you live underground like a mole? I mean, it's true, I DO live underground but so does everyone else on this silly planet – apart from maybe the aliens. Or does being 'grounded' mean that you can't take off? Even now, shut in my bedroom, I can still jump higher than I ever could on Earth. Ha – you can't ground me!

I'm not grounded because I smashed the rock. That was an accident. I just got warned to be sensible next time. I'm grounded because of what happened NEXT.



The story is a long one so, settle in – I'm going to tell you everything. After all, it's not like there's anything else for me to do...

It all started when Elijah's mum said that she had a fun art project for us and summoned us to the greenhouse.

"Look at all this beetroot!" said Elijah's mum. If you've never seen beetroot freshly dug from the ground, they are like knobbly purple juggling balls with heads of leafy hair. "Today, we're going to make beetroot paint."

Elijah pointed out that he already knew how to make beetroot paint, so his mum said that he could help to teach me. Apparently, on Earth, they had their own allotment full of carrots, pumpkins and sunflowers.

I thought that making paints sounded like fun – more fun than anything else on Mars, anyway. We grabbed Ellie-May and headed for the kitchens.

To make beetroot paint, you need beetroot, water and cornflour.

1. First, chop the beetroot up into very small pieces.
2. Next, pour boiling water over it and leave it to cool completely.
3. Then, pour the mixture through a sieve to get out the lumps.
4. Finally, mix cornflour into it to make a purple paste.

Ellie-May is too young to use a sharp knife or pour boiling water so we had to do those steps for her. She's very good at mixing, though – so good that she splashed purple paint all over her green dress.

We'd just finished mixing the paint when Mum turned up, looking for me to check that I hadn't got myself into trouble again – as if! When she saw the paint, she went to fetch scrap paper from the lab for us to paint on. There's almost no paper on Mars because it's another thing that has to be shipped from Earth. You can draw some really interesting



pictures around scientific graphs and data tables if you're creative enough, though. Ellie-May turned a pie chart into an enormous flower and Elijah turned a line graph into an exploding volcano. I turned a histogram into an alien city with skyscrapers and hot air balloons and Martian bicycles. I showed it to Mum and she said that it was very imaginative.

All of a sudden, the alarm went off and the LED display flashed up on the canteen wall.

### BIO LAB COOLER MAJOR FAULT - ALL HANDS TO BIO LAB

I set off at a run but Mum pulled me back. "Where are you going?" she asked.

"It says 'all hands'," I pointed out.

"I don't think that you children will be much help," said Mum. "Stay here and keep out of trouble. We'll be back as soon as we can." Then, she muttered so quietly that I could only just make out, "...haven't had a chance to investigate yet... precious samples..."

As she and the other grown-ups rushed away, we were left alone with the noisy alarms and purple paint.

We soon ran out of scrap paper to paint with. That was when I had an idea.

"Ellie-May, how would you like it if I fixed your dress?"

Ellie-May's dress was still splattered with purple spots. They were definitely going to leave stains. I thought that I should at least turn the spots into a pretty design so that they looked deliberate.

"Yes, please!" said Ellie-May.

Soon, all three of us were painting purple stars and moons and planets all over Ellie-May's dress. Then, from absolutely nowhere, she asked us the most wonderful question.

"Do you want to play with my ball?"

"WHAT?!" I yelped. "You have a ball? A real-life



ball?" I couldn't believe that Ellie-May had had a ball all this time and no one had ever mentioned it. We could have been playing Martian football or alien catch instead of endless 'I Spy'.

"Yes," said Ellie-May, acting as if everything were perfectly normal. "So, do you want to play?"

"Yes! Yes, please! Come on, let's go!" I yelled.

Together, we bounced along the deserted corridors toward Elijah and Ellie-May's flat. The lights buzzed and our footsteps echoed. All work around the colony had stopped as everyone had been called to the bio lab. There was no one about anywhere — that was, until a figure flew out of a doorway and crashed into Elijah.

"Watch it!" snapped the figure. It was Letitia.

I wanted to pull a silly face at her and keep walking, but Elijah is nicer than I am. "I'm sorry, Letitia!" he said. "I didn't see you. Do you want to play with us?"

"No, thanks. I'm going to play with my OWN friends." She looked Ellie-May up and down, taking in her newly improved dress. "Paint that yourselves, did you?" she said, in a way that suggested that she didn't think much of our art skills.

Ellie-May didn't notice the sneer in her voice. "There's still some paint left. We could decorate your clothes, too!"

"No chance," Letitia scoffed before flouncing down the corridor. I was glad. I didn't want to play with Letitia anyway.

In Ellie-May's bedroom, we all gazed in awe at the ball. It was a football-sized inflatable sphere made of glittery purple plastic which swirled like the gases of Jupiter.

The first game that we invented was small enough to fit inside Ellie-May's tiny bedroom. We threw the ball hard at one wall then dived out of the way.





The competition was to see how many times it would bounce from wall to wall before it hit the ground. I held the record at five bounces, until Elijah lifted Ellie-May onto his shoulders and, together, they got seven bounces!

Then, we decided to go into the corridor where there was more space. We played football where Ellie-May and Elijah were both goalies and I was trying to score all the goals. Only, there still wasn't very much space so I couldn't get any goals in – even Ellie-May was big enough to block the corridor if she stuck her arms and legs out like a starfish.

“I wish that we could just borrow spacesuits and go outside,” I said. I imagined bounding over the red dust of Mars in a rubber suit, chasing the purple ball across the rusty valley.

Then, Ellie-May said, “What about the greenhouse?”

“Of course! The greenhouses are huge!”

“Yes! There's plenty of room to run around between



the vegetable patches."

We galloped down the corridors, me holding the ball and Elijah holding Ellie-May's hand. As we passed the labs, we heard lots of noise and bustling. This was where all the grown-ups were, trying to fix the major fault. Some of the grown-ups leaked out of the door, heading back to their business, but I didn't really think about it at the time.

We raced into the greenhouse, only to find that all the other children in the colony were there already. Some were skipping, some were strolling around or playing with toys on the floor. Letitia sat with her other friends on the low wall around the tomato bed. They were making friendship bracelets.

"Let's play over there." I pointed in the opposite direction. We quickly decided where the goal would be and took turns being goalie. The game didn't really work, though, as the ball kept flying so high over our heads so that we couldn't even kick it.

That's when Elijah suggested that we invent a new

game called 'Mars Ball'. It was a good idea but first, we had to do some scientific experiments to find out the best rules.

The rules that we decided to test first were:

1. Anyone can touch the ball with their hands or feet.
2. If you pass the ball, it has to bounce on the ground at least once to be a valid pass.
3. To score a goal, you have to shoot between two goal posts but the ball can go as high as you like.

We never got a chance to try any other rules and now, we never will.

"You'll get in trouble if you break something," said a voice from the pepper patch. It was Letitia. She'd come over with her friends just to annoy us.

"If you want to play, you have to ask nicely," I told her.



"It's a good thing that I don't want to play, then. I don't want to get sent back to Earth for breaking something."

"Could that really happen?" asked a worried Elijah. I told him not to be silly. Letitia was just winding us up.

We had just switched so that Elijah was in goal with Ellie-May and I was trying to score. That's when the grown-ups started to trickle into the greenhouse.

I was taking a free kick because Ellie-May had caught the ball before it bounced. I placed the ball between the potato patch and the herb bed, took a few steps back, ran at the ball and - SLAM!

The ball flew into the air, high over the heads of all the children, high above the artichoke plants and beanstalks...

...and crashed into one of the overhead lamps dangling from the roof. Little pieces of lamp rained over the greenhouse and -

SPLAT. The ball landed on a patch of ripe melons.

That's when a shadow fell over us. It was Elijah's mum, back from the emergency meeting. She wasn't angry - she was raging.

"YOU THREE. GET OUT OF THE GREENHOUSE, RIGHT THIS SECOND!"

Her face was all scrunched and twisted, and she was shaking like leaves in a storm. We all stared at the ground as we shuffled from the greenhouse.

I don't feel like telling the rest of the story. Imagine lots more yelling, unhappy grown-ups and being dragged to offices belonging to scary people you've never met before to discuss the seriousness of breaking a heating lamp that the colony relies on for food. Then, imagine being sent straight to bed and sobbing into your pillow for hours and hours because it's **NOT FAIR**. Imagine all of that and you'll feel a teeny bit like I do now.



Science



## MARS MAYHEM! IS THE MARS MISSION DOOMED TO FAIL?



PUBLISHED 19<sup>TH</sup> SEPTEMBER 2060 - 17:56PM  
LEONA VENTURIS - SPACE CORRESPONDENT

In the biological experiment laboratory of the Marineris Colony, Mars, a valuable soil sample has been lost. The loss was the result of a cooling system failure within one of the labs. As a result, a number of microbial cultures were destroyed when they experienced a rapid rise in temperature.

The most valuable sample was one collected from a cave at a 160km (100m) distance from the Marineris Colony. Initial investigations had indicated that the sample could potentially contain the first proof of life on Mars.

“It’s a huge blow,” said Ava Harper, a biologist in the Marineris lab. “Having recently joined the team of biological researchers here on Mars, I was itching to get my microscope on this sample.”

The cooling system failed due to a technical fault which went unnoticed by researchers until temperatures had climbed too high to be remedied. A warning echoed through the colony, calling all hands to the bio lab, but this was not enough to save the samples.

“On Mars, any mistake can mean the difference between life and death,” said Mona Silvera, one of the initial designers of the colony, which was founded in 2044. “There are no easy fixes and no ready supplies of new materials or replacement parts. The colony is 80% self-sufficient, but anything that cannot be made locally – such as replacement cooler parts – must be shipped from Earth. That can take months or even years.”

“There’s no need to despair.”

- Ava Harper

It is not the end of the Life on Mars project, however. Harper reassured the Universe, “There’s no need to despair. Another expedition to the cave to collect further evidence of life is already in the works. Watch this space.”

The failed cooling system wasn’t the only problem to beset the colonists, as, in a separate incident, a greenhouse heating lamp was damaged beyond repair, endangering the colony’s food supply. Colony officials have assured The Morning Universe that current food supplies will be sufficient to keep the colony fed until the arrival of the next supply ship.

**Because you read this**

- What foods would you take to Mars? Take our [poll](#).
- Inside the Marineris Colony - See the exclusive [photos](#).





## CHAPTER 7:

Odd Jobs





MarsMusic



MarsMail x



https://www.mars.mail/inbox.html



INBOX (3)

SENT

MarsMail

SEARCH



Hello, JAZZ.HARPER!

Sat 20 Nov, 13:25

1 ATTACHMENT



From: ELLEN SWEENEY (ellen.sweeney19@marsmail.com)

Subject: Trouble in Paradise?

Dearest Jazz,

Oh dear. I hear that there's been trouble up at the colony and that you were caught in the middle of it. I'm sure that you're in the doghouse now but – and don't tell your mum this – I know exactly how you feel!

It takes me back to my very first expedition in 2021. I was young – still studying for my first university degree, in fact – and I had the opportunity to visit Egypt. On the first night, the team heard of a group of burrowing sand cats. Naturally, they decided to set off immediately to make observations because, at that time, the species was considered threatened by the expansion of human settlements.

Well, I grabbed my hat and was tying my bootlaces when the leader of the expedition, a man named Dr Fitzpatrick, stopped me. He told me that I was to wait at the camp while the 'grown-ups' got on with their jobs. Of course, I protested. I was nineteen and I hadn't come all this way just to wait at camp. However, Dr Fitzpatrick insisted that, as the most junior member of the team, that was my role. They'd report their findings when they were back.

I watched the party tramp away over the sand dunes – and then I sprang into action. I zipped up the tents and packed away our dinner (to stop the scorpions finding it) and I was away, over the dunes as fast as my legs could carry me!

Before I knew it, the sand cats' burrows were in sight. I lay in the dunes with my notebook as the cats crept out for their dusk hunt. Sand cats are similar in size to domestic cats, with sand-coloured fur, brown stripes and tufty ears. As I observed these sand cats going about their business, I noticed that they were not like other sand cats I had seen. They had paler stripes and redder fur and their ears were slightly larger. I took photos and made detailed





MarsMusic



MarsMail x



https://www.mars.mail/inbox.html



INBOX (3)

SENT



SEARCH



Hello, JAZZ.HARPER!

Sat 20 Nov, 13:25

1 ATTACHMENT

Keep working hard and believing in yourself, my duck.

All my love,

Gran



notes, then hurried back to camp, hoping to return before the rest of the group.

I knew, as soon as I crested the last dune, that I was in trouble. The pack containing most of our food supply was hanging open and the mouth crawled with insects who had arrived for a tasty meal.

I charged down the dune and snatched up the food bag but it was too late. Half the contents had been nibbled by hungry beetles. When the rest of the party returned, I was in such enormous trouble for abandoning my post and I was immediately sent away to fetch replacement supplies, so there was no chance of joining in the rest of their expedition.

It just goes to show that even the smallest job, like looking after the food, can be absolutely crucial to the success of a mission.



ATTACHMENT: EGYPT.JPG





Sol 104, Mars Year 57

Dear Diary,

Mum came home today with some super-duper, amazing, exciting news...

She's going on a mission to find ALIENS. Real-life Martians! From Mars! Which is the whole reason we came to this planet in the first place!

She doesn't have to go very far. Apparently, there are some caves only 30km from the colony where the conditions are right for Martian life. Just think, we might be living only 30km away from a Martian city! It makes sense, really. We live underground to stay safe from the sun so I bet Martians have to as well.

I asked if I could go and Mum said no. I asked if it was because I was grounded (I am still grounded... possibly for the next century) but Mum said that the reason I couldn't was because only she was going — she's a specialist, you see. She will only be gone

for a few hours and she'll tell me all about it when she gets back.

I asked if I could see the aliens once she'd brought one back to the colony. She smiled and said, "We'll see..."



Sol 106, Mars Year 57

Dear Diary,

Unbelievable! Incredible! And so, so, SO unfair!

Today, I went to school as usual - I'm still allowed to go to school - expecting it to be a normal school day: normal maths, normal English, normal babbling from Elijah about rocks or black holes on one side, and normal Letitia looking smug on the other.

When we arrived, Ms Kay clapped her hands and said something very NOT normal!

"I have an announcement - a special surprise. Today, we're going on a field trip! We're going outside!"

I couldn't believe it. Finally, I would get the chance to explore and be a REAL adventurer on a REAL adventure looking for REAL aliens. I was so excited that I could barely sit still. I kept hovering up and down in my chair just waiting for Ms Kay to tell us to go and grab our bags.

The classroom was filled with chatter. Clearly, I wasn't the only one who was excited for this adventure. Elijah was beaming and chattering about visiting Olympus Mons. I told him that wherever we were going, we'd better be on the lookout for aliens!

Once everyone had finally settled down, Ms Kay told us that we would be going to look at the lichen fields that were being planted out in the valley. She told us that these were a valuable food source and would begin the process of changing Mars' atmosphere so that it had more oxygen and less carbon dioxide. Eventually, it could make Mars' atmosphere breathable for humans.

OK, so it wasn't Olympus Mons or alien-hunting, but it wasn't bad either.

Ms Kay told the class to line up by the door as we needed to get our Mars suits. Elijah and I pelted towards the door but, as we got there, Ms Kay put her hands on our shoulders.

"Not you two."



All my happiness leaked out through my toes.

"You didn't think that I'd be taking you with me after what happened in the greenhouse last week, did you?" Elijah's face had gone rigid but Ms Kay continued. "I need to be able to trust every single pupil whom I take outside and I am afraid that, after your reckless behaviour, I simply cannot trust you both to behave. You will be doing odd jobs around the colony. Your first job is in the communications room."

We watched the rest of the class bounce away, babbling happily. Before going round the corner and out of sight, Letitia gave us one last look - the smuggest look that she could muster. I felt like running after her and giving her a piece of my mind. It wouldn't have been worth it, though - I knew that I'd only get into more trouble. I took a deep breath in and a long breath out and trudged in the opposite direction with Elijah.

"Maybe, when we get to the communications room, I'll be allowed to write the end of my time-travelling wizards story," said Elijah. He was clearly trying

to see the bright side but, to be honest, even he didn't sound very hopeful.

Once in the communications room, we had to sort through a pile of old tech. Our job was to untangle the wires and see if any of them still worked. On the colony, nothing is thrown away because resources are so scarce that if anything can be reused, it will be.

It was dull work - SERIOUSLY dull work. The only fun moment was when Elijah found some goggles that made him look like an alien scientist. A grown-up told us that they were a really old invention: a VR headset or something.

"Do you remember on the Argo," I asked, chucking a pair of ancient headphones into the box of broken equipment, "when we didn't have to go to school and we played computer games all the time?"

"And you always won at Galaxy Racers and I always won at Alien Task Force," said Elijah, tapping every key on a keyboard to make sure that they all worked. "Yeah."



We both sighed.

After that, we went to the laundry room. We had to sort through donations of clothes that people had grown out of or left behind. Some needed washing, some needed ironing and some needed to be cut up and made into something else because they had too many holes.

"Do you remember when we were on the Argo," asked Elijah, ironing another beige T-shirt, "when we only had to change our clothes three times each month?"

"And we never had to do any laundry?" I added, throwing a bag of smelly clothes into a washing machine. We both sighed.

The last job was the worst: cockroach-shelling. We were given a bowl filled with dead cockroaches that needed to have their heads, legs and shells taken off before they could go into tonight's curry. Cockroach curry is delicious but pulling off their legs, heads and shells is enough to put anyone off eating it ever again.

"Do you remember on the Argo when we used to have no-hands eating competitions?" I said, crunching a cockroach shell with my finger and thumbnails.

"And we ate burritos for every meal," Elijah said, throwing cockroach meat into the curry pot.

We both sighed.

After the cockroaches, we washed our hands for about ten minutes to get all the cockroachiness off and headed back to the classroom. It wasn't long before the rest of the class arrived and they were even more excited than when they left.

"We saw the lichen fields!"

"And the irrigation system for watering it."

"Soon, there will be a whole farm and they'll be able to grow other crops as well."

Everyone settled down at their tables so that Ms Kay could give out any end-of-day notices.



Letitia was the last to stop talking. "I'm so glad that we got to do that. It's really given me a taste for what it'll be like to be a REAL explorer on Mars. By the way, was anyone else given a souvenir by one of the scientists?" From out of her pocket, she fetched a large lump of red Mars rock inside a clear, plastic case.

Elijah looked like he was going to cry. Letitia turned to me. "How was your day of drudgery? I hope that you found it fun," she said, flicking her long hair over her shoulder. "Doing odd jobs is the only way that you're ever going to be useful on Mars. Imagine people like you being allowed out on the surface to explore!" She laughed cruelly.

At the time, I just wanted to make her shut up, but the more I think about it, the more determined I feel. I have to do something.

I'll show Letitia. We're going to be better Mars explorers than her. We're going to be the most famous explorers on the whole planet... and I know exactly how we're going to do it.







## CHAPTER 8:

A Top-Secret Mission



Sol 115, Mars Year 57

Greetings, future diary readers!

This is Elijah, reporting for duty once more. Jazz has designated me scribe of our top-secret mission and I take the responsibility very seriously, even though it's very difficult to write while wearing a spacesuit. What follows is, as always, a true and faithful account of events - events which have led us to a very interesting point - but let us start from the beginning.

The sol began when Jazz arrived at my door just after breakfast. It's Saturdaysol so I was still in my pyjamas. She had an explorer hat on her head and a bulging backpack on her back. "We have a top-secret mission," she said. "Get dressed."

I got dressed as fast as I could and told my parents that I was off to play with Jazz. Ellie-May wanted to come, too, but Jazz said that the game we were playing would be too scary for her.

I asked Jazz what our mission consisted of as she dragged me along the corridors.

"We're undercover agents on a quest to find real-life aliens," she whispered. She smiled and waved as some grown-ups walked past in the other direction. "We mustn't act suspiciously or we'll be found out. Come on, we haven't got long before the buggy leaves."

Obviously, I knew right away that we'd be perfect for this mission. After all, I know all about Martian rocks and Jazz knows all about adventuring from her gran - not to mention Jazz's racing skills and my talent at sneaking into alien environments to investigate strange lifeforms. We learnt all that in the Fun Zone on the spacecraft, playing Galaxy Racers and Alien Task Force.

I followed Jazz until we got to the equipment room. "If anyone asks, we've been sent to do extra chores," said Jazz as she pushed open the door. I laughed at how seriously she was taking her game.

The equipment room was deserted. The blue spacesuits hung from their racks, just like they had after we'd cleaned and repaired them many sols ago. The suits looked eerie and soulless with their blank helmets and dangling limbs. The air had the distinctive eggy smell of Mars soil.



Jazz closed the door behind us with a snap and explained the next stage of our plan.

"The Mars buggy is in a big hangar outside the airlock. If we want to go out there, we'll need to wear spacesuits, otherwise... we'll... we'll explode!"

I tried to explain to Jazz that 'explode' was probably the wrong word as you would be more likely to freeze on Mars than anything else, but Jazz gave me a look like she didn't need my help.

"Well, whatever the reason," she said, "we can't go on our top-secret mission if we're not wearing spacesuits. You're shorter than me so I'll let you have the very smallest if you like."

My stomach did a somersault and my heart started to beat a little quicker than before.

"You... you mean we're really putting them on? Are you sure that we're allowed?" I asked.

Jazz rolled her eyes. "We're just trying them on, for

now. Anyway, it's training for when we're famous Mars scientists and get to go on expeditions whenever we like."

I suspected that if an adult caught us, we might still get in trouble, even if we were just trying. However, I really wanted to be prepared for when I am a famous scientist.

It takes ages to get into a spacesuit. There are lots of things that need to be carefully sealed up so that you absolutely, definitely can't die. Then, you need to attach the electronic pack. It hangs over your shoulders and straps around your waist, and it's really heavy. This is the device that filters oxygen out of the atmosphere and monitors temperature and radiation when researchers go out on the surface of Mars. We learnt all about how to use the spacesuits and why we need them before we set off for Mars but I hadn't had a chance to try one yet.

The longer we struggled with our suits, the more I wondered what would happen if any grown-ups caught us. Although my nerves were fizzing, Jazz kept saying things like, "Are you all present and correct, Lieutenant Elijah? Ready for launch in T-minus ten minutes. Those aliens won't know what hit 'em."



Somehow, this made me feel better.

Once we had our suits on, Jazz stuffed two of the silvery ponchos into her backpack in case of radiation. She tried to jam her explorer hat on top of her helmet but it wobbled like it would fall off at any moment. She decided to leave it behind. Then, she said that it was time to get in the Mars buggy and she marched out of the equipment room and down the deserted corridor, stopping outside the airlock doors.

I ran after her. "Wait, Jazz! You mean, we're really going outside?"

"Yep."

My knees trembled and, for a moment, I thought that I might need to sit down. "On the surface of Mars?"

"Uh-huh."

"Without a grown-up?"

"That's the plan."

It suddenly dawned on me that this wasn't one of Jazz's ordinary games. The nerves that had been slowly fizzing away started to tremble more violently. I was willing to play along in the spacesuit - but this! This would absolutely land us in a whole world of trouble. I struggled to keep my voice from shaking. "We're definitely not allowed," I stammered.

"Aren't you fed up, Elijah? We're always stuck inside, cleaning spacesuits and shelling cockroaches and learning science from textbooks - when the whole of Mars is right there! Through those doors! And everyone's had a chance to see it except for us - even Letitia! Don't you want to go out there? Just once? This could be the biggest adventure of our LIVES!"

Through my worries, I pictured it: me and Jazz, side by side, strolling across the red rock of Mars towards the distant mountains. I did want to go outside very much. I mean, it would only be what everybody else was allowed to do...

When we got to the airlock, there was a keypad to get through and neither of us knew the code. We stood there, dressed up with nowhere to go. Our mission seemed to be



over before it had properly begun.

"Curses!" said Jazz. Her voice was muffled through her helmet.

That was when I spotted something. "If you look at the numbers, some of them are rubbed off like they've been pressed loads of times," I said. "Look - four, two and zero are more faded than the rest."

I knew instantly what we had to do. Jazz gave me a piece of paper from her diary and a pencil, and I wrote down every possible code combination, like this:

402                  240                  042

420                  204                  024

There were only six possibilities.

"We get three guesses before it sets off an alarm," Jazz said.

I stared at her in disbelief.

"What?" She shrugged. "I might have tried to get into the labs a couple of nights ago, that's all."

I reminded Jazz that most of the codes had four numbers and Jazz just said that perhaps this one was less secure. That didn't sound likely to me.

She typed in the first number on my list: 402.

Nothing happened.

She started to punch in the numbers again. As soon as she pressed one button, the keypad buzzed and turned red, as though an incorrect string of four digits had been entered.

It didn't make sense. There were only three buttons that had the numbers rubbed off but the keypad seemed to want four. For a moment, we were both stumped.

I'm not bragging but I'm the one who worked it out. I've got a strategic mind, you see! Anyway, I realised what it meant quite quickly: one of the numbers had to be used twice.



This was a disaster. We only had two guesses left and we had no idea what the possibilities were now. I racked my brains for some significant number that would let us get through the airlock.

That was when we heard footsteps - footsteps which were getting louder and louder. They were heading in our direction.

BEEP!

I whirled around to see Jazz, tongue out, punching in another code.

As the keypad buzzed and turned red again, it hit me - 2044! The year the colony was founded. I dived for the keypad and punched it in. With a hiss, the airlock doors opened. I grabbed Jazz's arm and jumped into the airlock. With the press of a button, the doors closed behind us.

Standing in the small space, Jazz gazed at me in admiration (I think - it was hard to tell through her visor) and gave me a high-five. She pressed a second button, and the airlock opened.

There it was: Mars.

Jazz and I took a few tentative steps outside. The rocky, red ground crunched beneath our heavy space boots. The sun was a small, cold speck in an amber sky. This was unlike anything that I had ever seen before. The red landscape stretched out for miles and miles without a tree or plant in sight. At home, I would often look out at the patchwork fields and see the birds flitting around in the blue sky, but here, there was nothing to break up the vast, red plains. Seeing Mars from the greenhouse in the colony was one thing, but to actually be outside, surrounded by a sea of orange, was breathtaking.

Before us was the vacant landing pad, covered in a thin coating of red dust. To the left stood the white dome of the greenhouse and the steaming funnels of the water treatment facility; to the right, the humming oxygen plant and the squat hangar where they keep the Mars buggy.

I bent down to inspect the strata in the rocky ground but Jazz was impatiently pulling me towards the hangar. "Come on, explorer." Her voice caught me by surprise as it rattled out from the speakers inside my helmet. "The Mars buggy is this way."



I asked if she planned on driving the buggy but she reassured me that she just wanted to see inside.

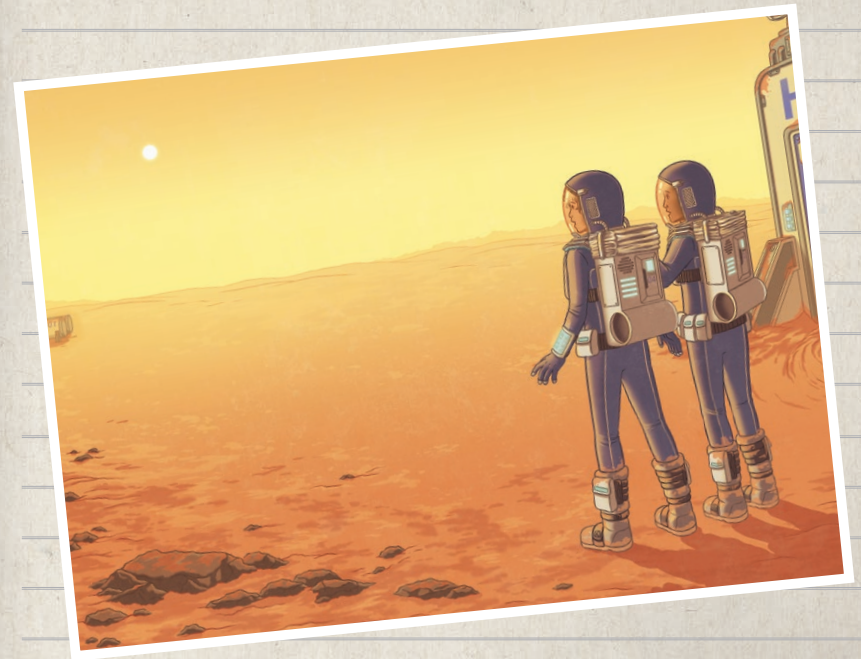
There was no code on the hangar entrance. After all, no one could get out here without first getting through the airlock. We crept into the hangar with Jazz keeping a careful watch for aliens. As soon as we were sure that the coast was clear, we ran for the Mars buggy.

Imagine a cross between a four-by-four and a jumbo jet: that's the Mars buggy. There's a button on the side that makes the door open up like a wing. Inside, there is a pilot seat, a dashboard of buttons and dials, and a screen and microphone to communicate with base. Then, in the back, there's a storage space for luggage and equipment.

That's where I'm sitting right now, with Jazz's backpack (which is mostly full of warm socks). Jazz is in the front, playing at being an explorer. She's twiddling the steering wheel and hitting the buttons - don't worry, they're not doing anything because the power is turned off. Sometimes, she tells me that she's sighted an alien and I stop writing to help her go and capture it and bring it back to the Mars buggy. Jazz holds the tranquiliser gun (it's a screwdriver really) and I hold the net

(which is just one of the silvery ponchos).

Now, she says that we're approaching a Martian city. It has domes and towers and whizzing things in the sky. Jazz says that the Martian police are coming to get us and to stop writing because







## CHAPTER 9:

Is There Life on Mars?



Sol 115, Mars Year 57, late at night

Diary, this is Jazz!

SO MUCH has happened since Elijah stopped writing. I don't even know where to start.

We were playing at being arrested by alien police in Marstropolis when, suddenly, the door to the hangar opened and the sunlight glared inside. There, in the doorway, stood three figures with horrible blue skin and enormous heads.

Elijah was babbling away in the luggage compartment about whether Martians would have the same laws as humans. I hissed at him to be quiet. His head popped up from the back. When he saw the figures, he started to breathe very quickly.

"Oh no, oh no, oh no, oh no!" he gabbled. "We are going to be caught. We are going to be in so much trouble. They are going to arrest us. They are going to throw us off the planet - I haven't even seen Olympus Mons yet! Oh no, oh no, oh no, oh no."

I shushed him.

We tried not to move too much. We didn't want to be spotted. Then, the figures huddled together and I took my chance to leap into the back with Elijah. He was shivering.

"Don't worry," I said, rubbing him on the back to calm him down. "It's just my mum and some of her scientist buddies. They are much too busy to notice that we are even here. Today's the day Mum's going looking for aliens."

Elijah's eyes went wide with panic. He had worked out my plan.

I hadn't told Elijah EVERYTHING, but I didn't exactly lie. I told him that we weren't going to drive the buggy, and that was true. Mum was the driver. Elijah is very sensible, you see - sometimes, he's too sensible. I knew that the only way to get him into the Mars buggy was to convince him that it was just pretend. However, it wasn't pretend at all. Today was the day that my mum was setting off to find aliens and we were going with her!



The buggy door opened and one of the rubbery, blue people swung themselves inside. I could tell by the familiar way in which she moved that she was my mum. She began to press buttons on the keypad inside the craft.

"We've checked the buggy over. She's in perfect health," said one of the blue-suited people outside. Their voices fizzed through our helmet speakers as they came within range of us, and I clamped my mouth shut so that they wouldn't know that we were there.

"It's a short trip," said the other, "but we'll be on the end of the line if you need us."

"I just hope that I can remember how to drive," Mum joked, strapping herself in. The door slammed shut and the buggy engine hummed into life. This was it: our last chance to own up and to go back inside to the colony where everything would be safe and normal and boring.

Letitia's smug face swam in my mind. I kept my mouth shut. If we confessed now, we'd be put on the first rocket back to Earth. This was our only chance to

prove that we were real explorers, just like Gran. Excitement and nerves bubbled like lava in my stomach.

The large door in front of the hangar rolled open. Official-sounding voices crackled over the radio again.

"Fuel tank: full. Weather conditions: blustery. Risk of dust storm: five per cent."

Mum flicked switches and twiddled knobs. The hum of the engine turned into steady chug. With a grumble and a lurch, the buggy was off, out of the hangar into the cold Mars sunlight. Elijah's hand gripped mine. I squeezed his fingers through our thick space gloves, to reassure him.

We drove for AGES. Elijah and I couldn't see much because we were crouched in the back behind the shutter. We could only see a slice of the dashboard and a sliver of windscreen. At first, it was interesting to watch the Mars soil roll past but, after a while, it got very boring. Dusty orange rocks were scattered in every direction. Even the air tram ride to Gran's flat was more interesting. At least there were trees and



buildings and people to look at as they flew past.

The journey seemed to take hours and hours... and that's because it did. I could see the clock on Mum's dashboard. When we set off, it said 11:31 and when we arrived, it said 13:45. The whole time, she was talking back and forth with her team at the colony. Their voices were crackly and hard to make out but Mum kept giving updates about where we were.

"Thirteen kilometres north-east of Marineris and skirting some craters."

"In five kilometres, I have a clear route ahead of me."

"Nineteen kilometres north, north-east and approaching a steep ridge. I've still got three-quarters of a tank so I'm going to give it some welly." We'd only travelled a few kilometres and it took forever because the buggy had to go slowly over the uneven terrain.

At last, we arrived somewhere gloomy and quiet. Mum stopped the buggy with a jerk. "I've reached my destination thirty-two kilometres from base. I'm about to

descend into the cave and collect the sample. I should report back within three hours, over."

"Copy," said the distorted voice over the radio. There was a beep and then silence.

The buggy gave a deep rumble and began to gently shake. Elijah and I held out our arms and tried to stabilise ourselves as the buggy began to judder. That's when I realised that it was lowering us down into a cave. After a few moments, the buggy steadied itself and came to a stop. Mum unclipped herself from her seat and made her way to the door. With a clunk, the buggy door swung up and Mum leapt out. We heard her steady breathing fading away as she walked away from us, and I knew that it was safe to talk.

I shook Elijah's arm. "This is our chance! We have to follow Mum so that we can help her to capture alien life. We can't let her face them alone."

We scurried from the buggy, our boots thudding on the dusty ground.



The buggy was parked inside a cave nothing like the caves on Earth. It was more like a crater as the sunlight streamed in from the large hole above our heads. The floor was made of rubbly red soil and the walls were rough. Jagged tooth-shapes hung from the roof.

"Look," Elijah whispered. "That means that there must have been lava here, once."

"Shhhh!" I said at once. "What if the aliens hear us — or even worse, Mum?"

In one hand, Mum was holding a strange piece of equipment with a long metal rod and a small display, and in the other, she held a torch. A trowel and a jar hung from her belt. We waited until Mum was nearly out of sight before we crept after her. Every so often, she stopped and plunged the metal rod into the ground. Each time, we froze, hardly daring to breathe until she started moving again. I wondered if the metal rod was some kind of Martian-sensor.

Mum went deeper and deeper into the cave until

everything was completely black. It was eerily quiet inside my helmet. I gripped my screwdriver and strained my ears pointlessly — sound doesn't travel far in the atmosphere here and all I could hear was Elijah's panicked breathing — but what if aliens had super-hearing? Perhaps Martians could see in the dark and that's why they didn't mind living in caves... Perhaps we were at the entrance of an underground city! Mum didn't seem to be carrying tranquiliser darts OR a net. I wasn't sure how she was going to collect an alien with just a torch and a trowel.

We followed Mum for hours. Although I didn't have a clock or watch, I felt sure that we had been outside of the buggy for longer than we had been travelling in it! Mum didn't turn back once — she was lost in her work. Her torch beam shone on the cave walls, which glowed deep crimson. In her wake, I inspected them for alien symbols and the floor for three-toed footprints or slithering tracks.

I was so busy looking around at the cave for signs of alien life that, at first, I didn't notice how strangely Mum was acting. She was stumbling over her own



footsteps and she bounded off one cave wall and onto the other. She was shaking violently. Then, she fell forwards onto her knees.

I tried to race over to her and see if she was OK but Elijah grabbed my arm and, as we watched, we saw what she was doing. She was scraping at the ground with her trowel. She poured a trickle of red dust into the jar at her waist and was just sealing it up when she slumped to the side against the cave wall.

"What's happening?" asked Elijah.

I didn't wait to find out.

"Mum!" I yelled, and I ran to where she lay. I shook her shoulder.

"Oh, have you come to rescue me?" she said, in a slow, woozy voice. "It's very warm. I didn't know that Mars was so warm. I'm going to take off my spacesuit." With that, she reached up to unclip her helmet.

"No!" I yelled and I grabbed her hands. "You'll die if you

do that. Mars is too cold and there's not enough oxygen. Elijah, help."

Luckily, Mum isn't very big, even for a grown-up. Elijah took her feet and I took her shoulders and we carried her from the cave. Mum had gone all floppy and was still babbling. The way in which she was behaving reminded me of something...

It took an age to get Mum back to the buggy and we puffed and panted the whole way. We opened up the back and loaded her inside. By then, she had stopped shivering.

Suddenly, I remembered. "Hypo-mirth-ia!" I cried.

Elijah looked baffled.

"That thing when you get really cold!" I explained.

He said that it was 'hypothermia' and I explained what Gran had told me.

"It means that she's too cold." I didn't say that, if we



weren't quick, she could die - I didn't want to even THINK about that. "We need to warm her up, but not too quickly. Grab my bag - it's full of socks."

"What about the silver ponchos?" said Elijah, flinging my bag over. "If we turn the ponchos inside out, her body heat will be reflected back at her so that she warms up instead of getting colder and colder."

"Perfect!" I shouted. "Wrap her middle first so that she warms from the inside out. We should get the engine running, too."

The screen showed that the buggy's temperature had dropped to  $-4^{\circ}\text{C}$  but Elijah and I couldn't feel it. Elijah said that the heat of the engine should warm up the buggy. He explained that mum's spacesuit's heating regulator system must be broken or she wouldn't have got so cold. When he inspected the wires on the front, he found the tiniest split in one of the wire cases.

"They're meant to be checked and double-checked before every mission! Mr Moustache said so!" As I said it, I remembered with a twinge of guilt how fed up I'd

been just cleaning three of those suits. If I'm ever on wire-checking duty in the future, I'll be extra careful, even if it's the most boring job in the world. But there was no time to dwell on that. Mum needed help NOW.

"Let's go," I said, pushing Elijah towards the pilot seat.

Elijah's face went all wobbly and his eyes went so wide that I could see how white they were even through the dark glass of his helmet. "Me? But... I'm rubbish at Galaxy Racers."

It's true. Elijah is completely rubbish at Galaxy Racers.

"Jazz?" Mum's weak voice croaked over the rumble of the buggy's engine. "Jazz, it is time for bed now, darling."

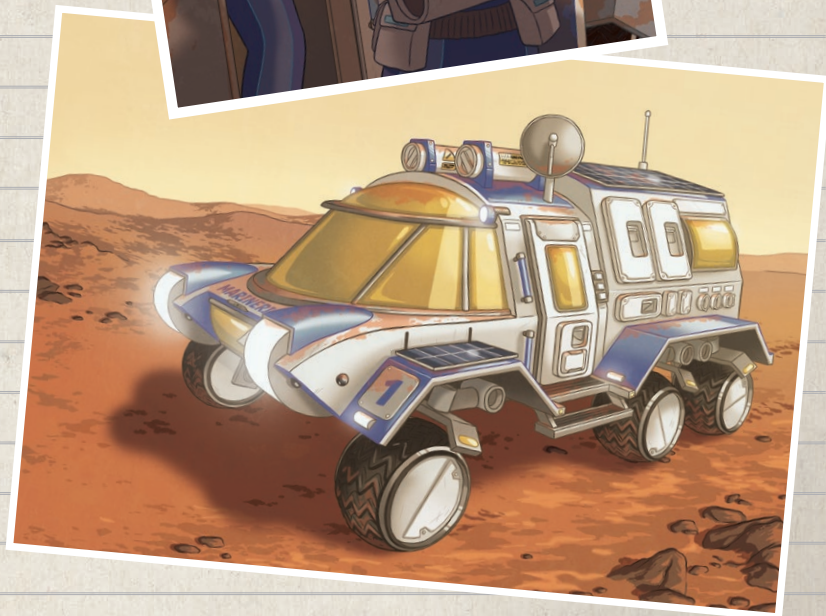
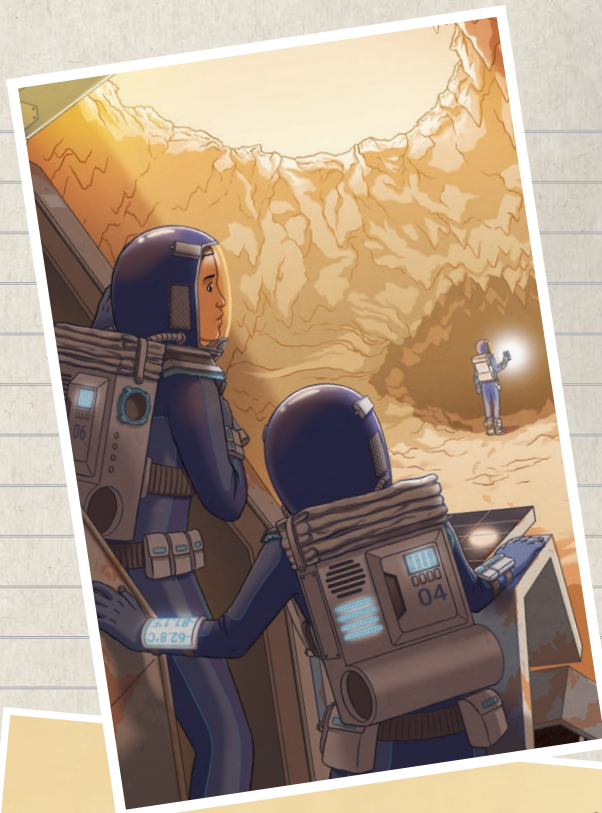
There was no time to lose. Mum was still in danger and I needed to get her to safety.

"I'll pilot the buggy back to Marineris Colony. Just... keep Mum warm. And don't let her go to sleep, whatever you do. We want to keep her conscious so that we can tell if she is warming up."



I leapt into the pilot seat. Elijah had already started up the engine so that all I had to do was get the buggy moving. I pressed button after button but nothing seemed to happen. I had to get this thing moving or Mum was going to be in even more trouble. After trying a few more buttons, I realised that there was a pedal on the floor. This HAD to work!

Pressing the pedal lightly, with the very tip of my toes, I held my breath as the buggy began to move forwards. Slowly, we rumbled over the rocky ground. I experimented with the steering wheel, jerking it this way and that. Then, I revved the engine and we shot up out of the cave and over the rocky landscape, following the buggy tracks in the dust.







CHAPTER 10:  
The Greatest Explorers



## **Radio Transcript - Valles Marineris**

### **Sol 115, Mars Year 57**

**Marineris Base:**

Dr Ava Harper, have you returned to the buggy?  
Over.

**Unknown:**

Yeah, she's in the cargo hold. Elijah is looking after her.

**Marineris Base:**

I don't understand. Who is in the cargo hold?  
Over.

**Unknown:**

My mum. Dr Ava Harper. This is Jazz. Don't worry, she's getting better.

**Marineris Base:**

To be clear, we are speaking to Jazz Harper, the daughter of Ava Harper? Over.

**Jazz Harper:**

Yes! Mum got sick with hypo... hypothermia, so I'm driving her back to the colony. She didn't find any aliens. Sorry. Er... over.

**Marineris Base:**

You are driving the buggy?

**Jazz Harper:**

Well, Elijah was too scared and Mum can't do anything right now. She's all foggy from getting too cold. Over.

*[Break in transcript – 12 seconds]*

**Jazz Harper:**

Hello? Are you still there?

**Marineris Base:**

Yes, we were just discussing – how is it that you are in the buggy? Over.

**Jazz Harper:**

Well – look – don't get cross or anything – we knew that Mum was looking for aliens and we knew that we were alien experts from all the games we play. Also, Elijah wanted to see some Mars rocks up close. Anyway, it turned out to be a good thing, didn't it? It meant that we were there to rescue Mum when her suit went wrong. Over.

**Marineris Base:**

This is highly unusual. Jazz Harper, we are just going to discuss the best course of action. Please keep communicating with us and listen carefully to our instructions. We want to make sure that you all get home safely. It looks as if you're heading too far west. Adjust your course a little to the south. Over.



**Jazz Harper:**

South... south... Where is the compass?

**Unknown:**

There are no compasses on Mars, Jazz.

**Jazz Harper:**

That's right! What did she say... the sun is starting to set over there... so south must be... I've got it! Heading south. Over and out.

*[Break in transcript – 44 seconds]*

**Officer Sean Jones:**

Hello, Jazz, this is Officer Sean Jones. Can you tell us the condition of the patient? Over.

**Jazz Harper:**

Elijah says that she's awake and shivering. She wasn't shivering before. Does that mean that she's getting worse? Over.

**Officer Sean Jones:**

No, no – it's a good sign. It means that her body has started to fight the cold. What steps have you taken so far to aid the patient? Over.

**Jazz Harper:**

We wrapped her middle up in inside-out silver ponchos, placed warm socks over her hands and feet and started the engine to warm up the buggy. It's up to ten degrees now. Over.

**Officer Sean Jones:**

Good. If it gets up to twenty degrees, stop the buggy and allow it to fall a little way before continuing. She shouldn't be warmed up too fast. Over.

**Jazz Harper:**

Got it. Over. Oh, one more thing. We have the dirt! Over.

**Officer Sean Jones:**

Sorry, Jazz, could you repeat that? Did you say 'dirt'? Over.

**Jazz Harper:**

Yes, the dirt that Mum collected in the jar. Over.

**Officer Sean Jones:**

Do you mean the soil sample from the cave? The one that she went there to collect? Over.

**Jazz Harper:**

Yeah, it's on her belt. Over.

**Officer Sean Jones:**

Ah! Well, let's just worry about getting you all home. Now, listen carefully, Jazz, you seem to be approaching a large crater. Head south. Repeat: head south. Over.

**Jazz Harper:**

Roger that, Officer Jones. Elijah, hold on tight!



Science



## THERE IS LIFE ON MARS

MARS' YOUNGEST SCIENTISTS ARE THE FIRST TO DISCOVER LIVING MATTER ON THE RED PLANET



PUBLISHED 7<sup>TH</sup> DECEMBER 2060 - 07:13AM

LEONA VENTURIS - SPACE CORRESPONDENT

Two young stowaway scientists, Jazz Harper (11) and Elijah Kiros (10) have become the first to discover native life on Mars, after a whirlwind adventure across the Martian desert which involved saving the life of renowned biologist Dr Ava Harper.

Dr Harper was on an expedition to replace a valuable Martian soil sample, lost during a heating system failure in the Marineris colony laboratories. The expedition involved a 32km buggy ride across the surface of Mars to a remote cave. Close to the warm Martian equator and showing evidence of water, scientists had identified the cave as a likely location for microbial life.

However, the mission ran into trouble when the heating regulator on Dr

Harper's spacesuit malfunctioned and she began to show signs of hypothermia, causing her to collapse shortly after collecting the sample. These regulators are a critical piece of equipment for any explorer on Mars as the temperature averages at a punishing  $-60^{\circ}\text{C}$ .

Luckily, two young stowaways were on hand to mount a rescue mission. Unbeknown to Dr Harper, her daughter, Jazz, and friend, Elijah Kiros, had hidden in the storage compartment in the back of the Mars buggy. "We came to Mars to learn about space, just like all the grown-ups did," said Elijah, explaining why the pair had sneaked onto the Mars buggy in the first place.

"We were determined to find alien life and that's exactly what happened," Jazz told the Universe. "Obviously, we knew that it would be microbes. We weren't expecting aliens with tentacles and three eyes or anything. We're not babies."

Early experiments performed on the sample show that it contains several distinct microbial organisms. Though the organisms are smaller than specks of dust, they hold the key to how life might flourish on Mars as a 'home away from home' for humankind.

"We were determined to find alien life and that's exactly what happened."

- Jazz Harper

Because you read this

[Are young explorers our future?](#) Our experts certainly think so!

Dr Ava Harper - [Read all about her adventures.](#)

[How to cope with the journey to Marineris - our top tips!](#)

[Think you could be a space explorer? Read how to apply.](#)



INBOX (1)

SENT



SEARCH

Hello, ELLEN.SWEENEY19!

Tue 07 Dec, 06:00

1 ATTACHMENT

**From:** JAZZ HARPER (jazz.harper@marsmail.com)**Subject:** FRONT PAGE NEWS!!

Dear Gran,

I'm front page news on the Morning Universe website, did you see? Elijah and I rescued Mum from nearly certain death by hypothermia and brought back the soil sample that PROVED that there was life on Mars.

It turns out that the aliens are actually microbes which are itty-bitty wriggly creatures rather than five-legged, green-skinned monsters. Apparently, that's still a huge deal. Huge enough to change the future of Mars forever.

When I arrived back at base after piloting the Mars buggy, everyone in the colony was there to meet us. I mean EVERYONE! Ellie-May leapt on Elijah as soon as he took off his spacesuit and his parents grabbed him

and sobbed. They hugged me as well, since Mum was being carried away to the medical bay. (I knew that she was getting better by that time because for the last part of the journey she was talking normally again.)

Ms Kay, my teacher, was standing there, looking like she wanted to say "Don't be ridiculous" about the whole thing. Letitia watched with her mouth open, unable to believe her eyes.

To be fair, Letitia deserves some credit. If she hadn't said that I would never be an explorer, I wouldn't have sneaked into Mum's buggy. If I hadn't been in the buggy, Mum might have been in serious trouble and the microbes might never have been found.

I could tell that the grown-ups really wanted to tell us off, too, but they couldn't because we saved Mum AND the microbes. They wanted to examine the soil sample right away. They snatched it from us and scurried away so, before they could vanish, I said that Elijah and I wanted to have a look as well.



INBOX (1)

SENT



SEARCH



Hello, ELLEN.SWEENEY19!

Tue 07 Dec, 06:00

1 ATTACHMENT



You should have seen their faces, Gran! They couldn't believe what I was asking. But they couldn't exactly say no, after I had brought back the sample with only the help of my trusty sidekick, Elijah, could they?

Well, first the scientists told us to shower and get changed and eat something since we hadn't all day. When we'd done all that, the scientists from Mum's lab led us over to the microscopes and when I looked through one, I could see all these tiny blobs wiggling about. They told us the tiny blobs were microbes and they were proof that there really was life on Mars! And they said that it was all thanks to me and Elijah.

Since then, there have been all sorts of photos and interviews with the press (via really slow video link) but what I'm most excited about is that I'm a real explorer now, just like you!

I've learnt a lot since being on Mars, about how to be a real explorer. I've learnt about how to keep equipment clean and care for it properly. I've learnt about how to prepare food even with the weirdest ingredients. I've learnt how to recognise and treat hypothermia. But most of all, I've realised that every little thing that happens in the colony – even the boring bits – plays a part in helping us to survive and explore Mars.

Hugs and kisses, Jazz xxxxxxxxxx

P.S. I remembered warm socks.

 ATTACHMENT: FAMOUS.JPG





TMU NEWS



MarsMail x



https://www.mars.mail/inbox.html



INBOX (9)

SENT



SEARCH



Hello, JAZZ.HARPER!

Tue 07 Dec, 18:08

attention to the details. You've come a long way, Jazz, and you've still got so far to go.

I expect that life on Mars will improve for you now – after all, you and that excellent friend of yours have made the biggest scientific discovery in centuries. I think that this makes you the greatest explorers on Mars!

Lots and lots of love,  
Gran xxx



From: ELLEN SWEENEY (ellen.sweeney19@marsmail.com)

Subject: RE: FRONT PAGE NEWS!!

My dearest Jazz – my brave, bold girl!

I thought about using this email to scold you for going off on a dangerous planet in uncertain conditions without even taking sensible precautions like telling someone where you were going.

I thought about it... but I know it wouldn't do any good! Exploration is in your blood, my duck.

All that's left to say is that I'm proud of you: for being an independent thinker, for acting bravely in the face of danger and for always wanting to know more. But most of all, I'm proud of how much you've learnt. It took me years to understand that exploring wasn't just about the big exciting discoveries. It's about looking out for each other and paying





## Afterword

By Jazz Harper

10<sup>th</sup> June 2111 – Sol 18, Mars Year 84

When I heard that researchers had uncovered my old diaries in the Marineris archives, I confess that I was worried. My first year on Mars was marked by all sorts of trouble, most of it caused by me with some help from Elijah. What is clear is that I was fascinated by science from a young age and that I was never going to sit around waiting for other people to discover things.

Although I didn't stow away on any more buggy rides to remote caves, I still learnt so much over the following years on Mars. At school, we studied how plants grew in the greenhouses and experimented with different sorts of food. Elijah was excited to analyse rocks from different areas of Mars and I couldn't wait to examine the various microorganisms that had been collected in the labs.

My five years on Mars seemed to fly by and, by the end, I didn't want to leave. After all, Elijah's family had decided to settle there for good, the colony was expanding and new experiments were starting all the time. The algae farms were flourishing and the artificial lake was almost complete. However,

Gran was getting older and Mum and I wanted to look after her so we flew home to spicy curries, chocolate fudge cake and tales of the jungle. This time, I had my own tales to share, too!

I spent the next decade on Earth, going to university and learning all that I could, but Mars was an itch that I couldn't scratch. In 2077, aged 28, I took a job on a freight ship to Mars because it was the quickest way back to the planet that I'd fallen in love with.

When I arrived, things were very different and still changing fast. For starters, the Red Planet was no longer completely red. As the spacecraft flew closer, I saw greenish splotches that showed where algae crops were growing, and white splotches that signified ice-covered artificial lakes. The colony was three times the size it had been when I had left. It had its own chemical extraction plants and factories which meant that it relied less on resources from Earth. There were more luxuries, too: a sports hall for playing Mars ball (the rules had changed since Elijah and I had first invented them) and a whole school with its own labs.

Elijah was already planning his first expedition to Olympus Mons and was in charge of a team that was collecting and analysing rock samples from all over Mars. I quickly joined a team of explorers and scientists, investigating how Martian life forms could help humans to thrive on the Red Planet.



We achieved other milestones, too. Elijah met a lovely chemical engineer and they got married. Their children were among the first babies born on Mars! When the first homes were built above ground, I made sure that I was at the top of the list to buy one. I now live in a lovely apartment with windows on three sides, overlooking Marineris Valley. Sometimes, I get out my binoculars and spy on the land below – just in case I can see aliens sneaking among the lichen farms and biodomes.

Once our adventuring days were done, Elijah and I accomplished one of our proudest achievements: we set up the first University of Mars. Now, students travel to this planet from all over Earth to learn the science of the Red Planet.

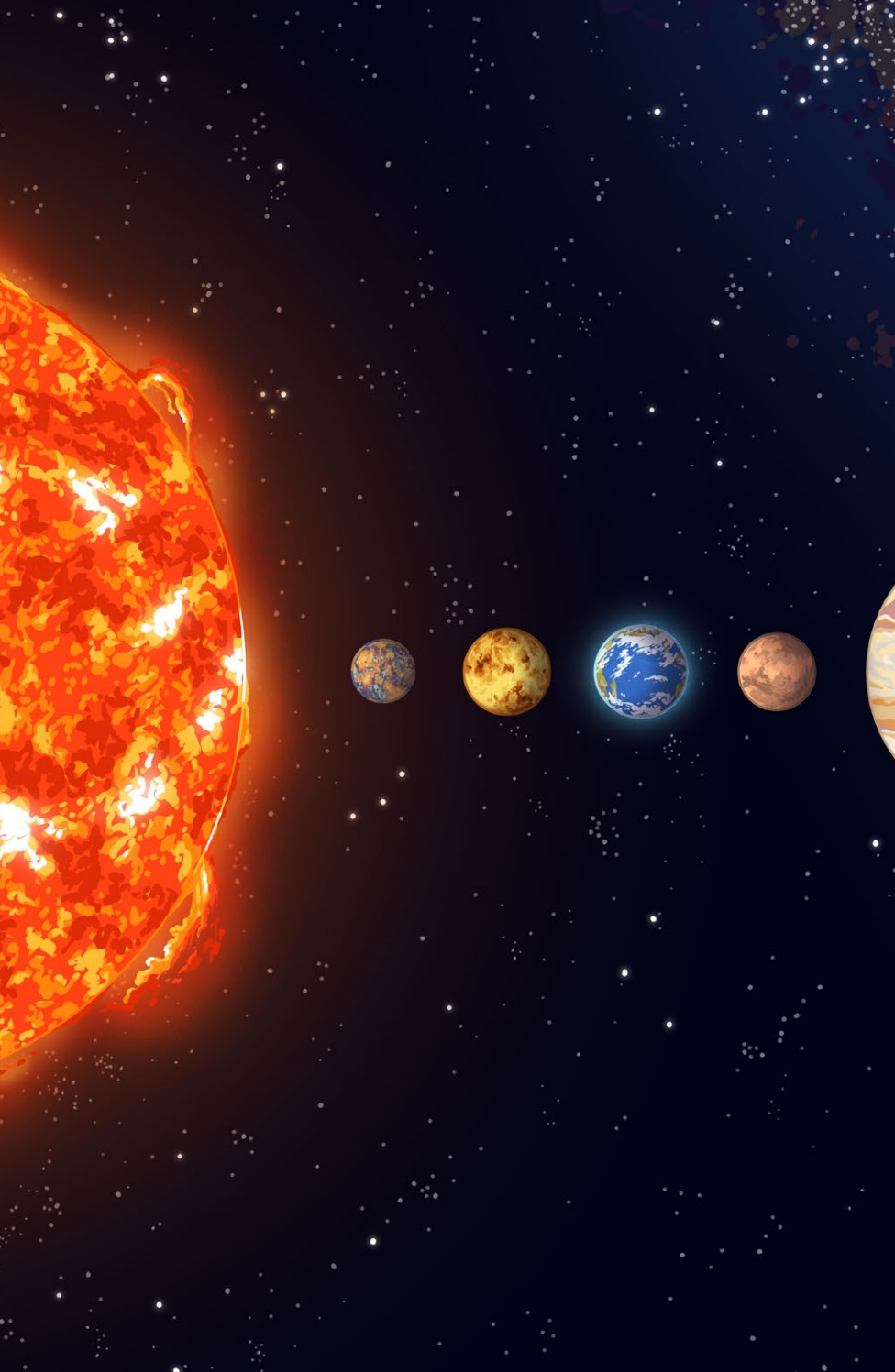
I'm now 72, in Earth years, and I still hope to see a few more changes in the future. We've achieved so much already: we're beginning to develop an atmosphere so that the air on Mars is breathable and the temperatures become bearable. We've built domed ecosystems of plants that act as safe havens for endangered insect species from Earth and, soon, we'll be able to transport larger animals to give them a new life here on Mars.

But, most importantly of all, we've built a home.

*Jazz Harper*  
(space explorer)







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