

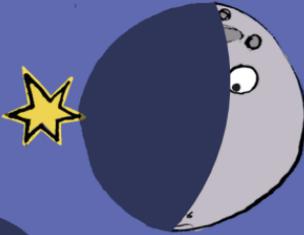
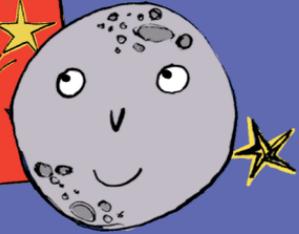
AN EXCLUSIVE STORY FOR

THE
ROCKETSHIP
BOOKSHOP



MEET MATILDA ROCKET BUILDER

THE EARLY YEARS
**PHASES
OF THE MOON**



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Meet Matilda Rocket Builder The Early Years: Phases of the Moon
is an exclusive story based on characters from
Meet Matilda Rocket Builder, a uclanpublishing book

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PHASES OF THE MOON!

Hi! My name is Matilda Musk (no relation to that SLIGHTLY more famous Musk). This is a bitty little snippet from my very scientific journal.

I plan on going to the Moon someday, so I'm keeping notes which will probably get put behind glass in a big museum for children to look at and go



"oh wow, that's actual writing from the greatest space adventurer ever." And then a dusty museum person will tell them to shush and not get their greasy fingers on the glass.

But I'm getting ahead of myself. Even though I am pretty clever now, I wasn't always so smart. Like, when I was five I asked dad why the Moon changed shape. He was making an egg and cheese sandwich at the time, which always takes AGES. It's like he's constructing a work of art or something. Anyway, he said "ask your mum" and went off in search of pickles.

I asked mum and she turned the question back on me, LIKE SHE ALWAYS DOES, and asked why I thought the

Moon changed shape. Like she couldn't just TELL me.

Top tip for any of you who get this: go big or go home. And by that I mean just think of answers so completely bonkers that the adult in your life will have no choice but to get to the point and give you the answer*

So I looked at Dad's sandwich and said "A giant space mouse eats it."

Confession time: I was five years old, remember. So I may have actually really properly believed that a giant space mouse was responsible for eating the Moon.

*Note: this doesn't seem to work on teachers.

Mum didn't say anything. She just grabbed the iPad (which Dad was using as a plate) and showed me some pictures of the Moon going from full and bright to a circle of black.

"See!" I said. "Something is nibbling it."

Mum gave me her 'I'm-not-saying-anything-because-this-is-an-important-lesson' look and I shut up.

She tapped the screen and I saw more pictures. Only this time the Moon was changing in the opposite way. It started as a circle of black and ended as a full, bright Moon.

"If it's being nibbled, how is it going from black to bright again?" she asked.

I wanted to maybe actually did say

"MOUSE VOMIT" but we won't dwell on that.

"Think. What's the Moon made from?" asked Mum.

"Chee... rock," I said. I was starting to doubt my giant space mouse theory.

The room was as quiet as... as... oh I can't think of a good simile. Anyway, it was quiet. Even my baby brother was quiet. And, miracle of miracles, Dad had put down his egg and cheese sandwich in order to listen. Dads can't do two things at once. Though he was still keeping an eye on the sandwich.

"Yes," said Mum. "And we know the Moon goes around the Earth. The word for that is 'orbit'."

I began to orbit Dad's sandwich. "But that doesn't explain why it changes shape," I said. I may also have muttered "still totally a mouse thing" under my breath.

"Hey," said Dad, moving to check on his sandwich. "You're in the way."

"Yes!" said Mum. "She is. And this is what happens with the Moon and Earth." She clapped her hands. "Let's do an experiment."

Mum pushed the sandwich away and handed out chores. "Get a torch. And turn out the lights."

Dad turned out the lights then tripped over my baby brother. Mum switched on the torch. "This is the sun,"

she said.

"At night?" said Dad.

Facepalm! Even back then I knew the sun didn't get switched off at night and I'd even seen the Moon during the day, so I climbed on a chair and patted him on the head. It's not nice to make other people feel stupid but I felt it would be fine with Dad.

"OK, Matilda," said Mum. "You are going to be Earth. Stand in the middle of the room."

Mum handed the torch to Dad and stood facing me but with her back to him. She was all dark.

"New Moon," she said. "None of the sun's light is reflecting on the side of

the Moon you can see. So it's dark."

My nibble theory was based on going from a Full Moon (which is big and bright) to the New Moon which you can't actually see in the sky. But it turns out that it's better seeing the phases of the Moon as going from New to Full and then back to New.

I was beginning to see where this was going.

"OK, now watch as I move around..."

"ORBIT!" I shouted.

"As I ORBIT you," said Mum. She moved anti-clockwise to my left. If I was a clock she would be between 10 and 11. The light now caught only a bit of her face in a crescent-shaped glow on

the right-hand side.

"The Moon in this part of the phase is called a crescent moon and it's WAXING. That means it's building up," explained Mum.

She moved again to my nine o'clock. I could see the light/shadow was half and half.

"This is called first quarter," she said.

"But it's half full!" I said.

"True," said Mum. "But think of the phases as quarters of the twenty-seven days it takes to go right around Earth."

She carried on orbiting my head and the light became fatter. "When it's more than half then it's called GIBBOUS. It's

still getting bigger so it's still waxing."

I had to turn my body to see her of course – I'm not some kind of weird human owl thing.

By this point she was standing on the other side of me, opposite Dad. She's taller than me (obviously) so her face was lit up entirely.

"FULL MOON!" I shouted.

"Being the sun is really boring," Dad mumbled. "Can I get back to my sandwich?"

Honestly, my brother has a better attention span than he does.

"Let's keep going," said Mum. "Watch what happens now." She walked further

around and the light became thinner but still took up more than half her face.

"GIBBON!" I said, quite proud about remembering the word.

"Almost," Mum said. I could see her smile in the torchlight. "It's gibbous. And because it's now growing less bright we call that WANING."

I knew a boy in nursery who was called Wayne. He was always complaining about being too hot, too cold, too hungry, not hungry enough. You name it, he complained about it. Miss Dough told him to stop whining and so afterwards we always told him to stop wayning.

Mum shifted again until half her face was in light (the left side this time)

and half in shadow. "Third quarter," she said.

Dad and I watched as the light grew thinner, back into a crescent shape, and then to where she'd started off with her back to dad.

"And it's a New Moon, where we begin the phases all over again," she said.

Wow. That was a lot easier than I'd thought (though still not as exciting as a giant space mouse. I could see why eating bits of the Moon wouldn't work though because nobody was going to be building an exact replica of it every twenty-seven days.

Dad flicked the torch off and then stumbled around for the main light

switch.

When the lights came up, Dad looked surprised.

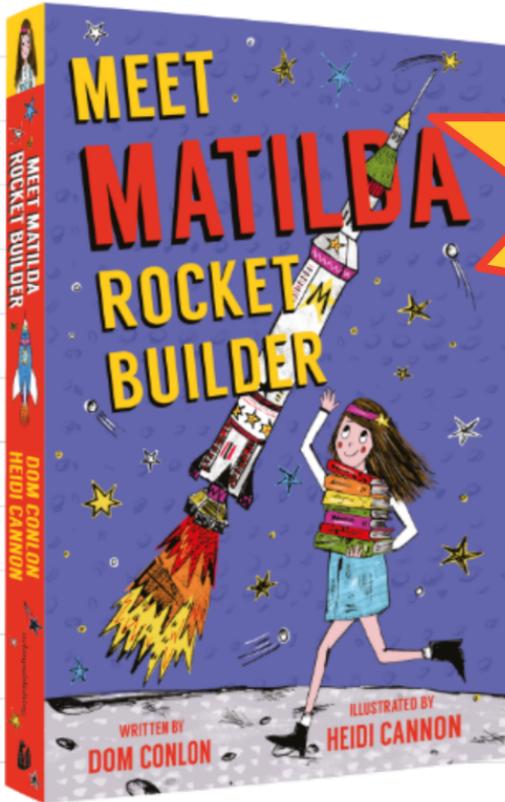
"Hey, who ate my sandwich?" he asked.

All I will say is that scientifically speaking, egg and cheese do not taste nice together.

Thank you for reading this EXCLUSIVE short story. Matilda's BIG adventure in science begins in Meet Matilda Rocket Builder - her story of discovery as she attempts to build her very own Saturn V spaceship and fly it to the Moon.

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— ROBIN INCE