

nature india

# Mini Science Newsletter

Macmillan  
Budding Scientist

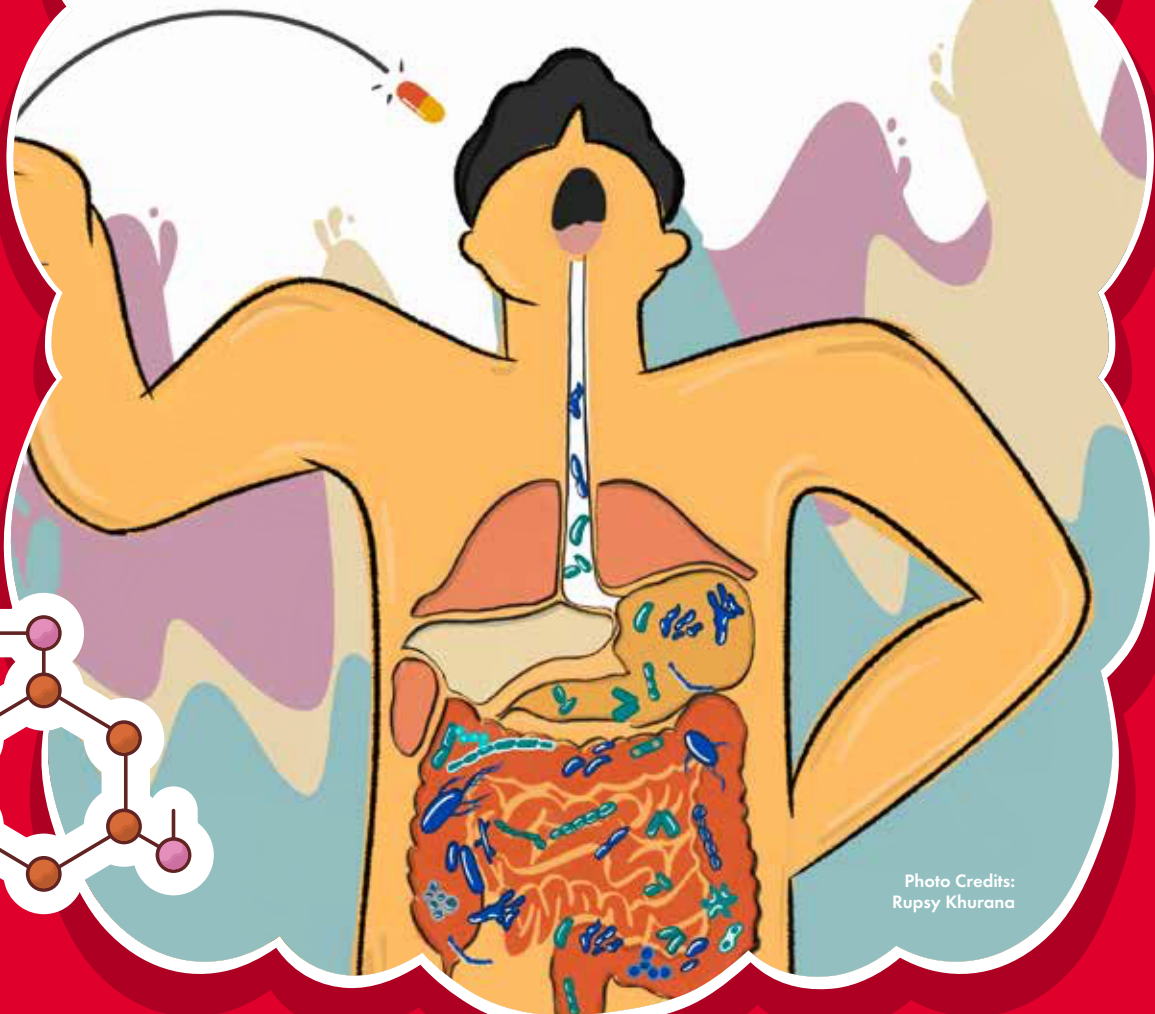
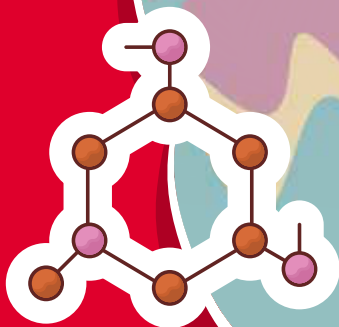


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Rupsy Khurana

# Hello young scientists!

Welcome to the second MINI (that's a clever acronym for Macmillan Education India and Nature India) Science Newsletter!

Here, you'll find exciting discoveries happening right now in India's science. Think of this as a fun way to go beyond your school science books, which do a great job of teaching you the fundamentals.

**But science is all around you, every day.**

In this issue, we feature bugs that can seal bricks made of moon soil (or something similar), a leather jacket that you can flaunt in summer, and how lab-grown lungs are helping scientists fight tuberculosis in animals.

This newsletter will help you discover how Indian scientists are making new inventions, solving big problems, and exploring the world in ways that can change our future.



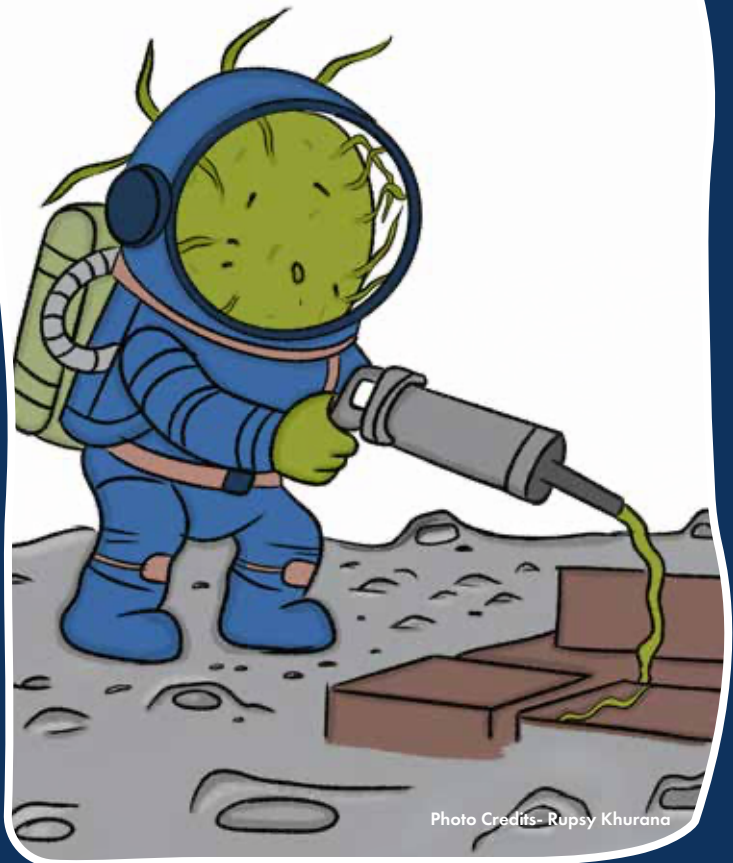


# Space bricks get a bug fix

Scientists are using bacteria to seal cracks in the bricks made of soil that mimics Moon soil.

Using a slurry made from ***Sporosarcina pasteurii***, which also produces a natural glue, they fixed the cracks in the bricks.

The experiment could go interstellar! The bacteria may hitch a ride on India's crewed mission Gaganyaan to see how it holds up in space.



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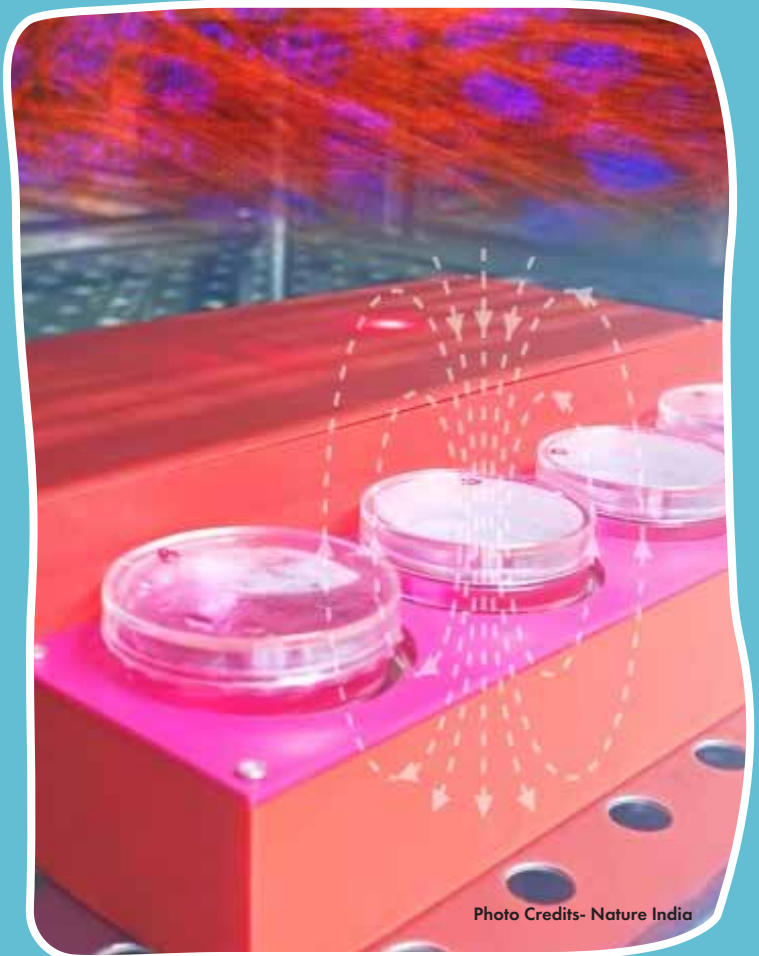
**Self-healing bricks for  
Moon colonies**



# Can magnets heal injuries?

Bioengineers have created a gel that can help heal and grow new muscles in the presence of a magnetic field. They can remotely control the gel (even with a phone) to make mouse muscle cells develop.

Imagine a future where torn tendons or muscle injuries could be treated just by activating a smart patch with your phone. It's still early days, so until then, stretch well and play safe.



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**A wireless, 3D-printed device  
helps regenerate tissue on  
a soft gel**

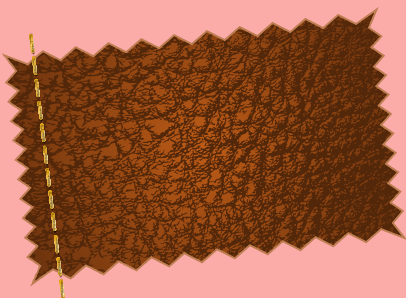




# Leather jacket year round? No sweat!

Now you can wear your leather jacket even in the summer.

Scientists can coat leather with heat-absorbing material – made of tannery waste – that can adapt to the weather, keeping you warm in winter and cool in summer.



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**Reinventing leather for  
a warmer world**



# A lab-grown lung gives a sneak peek into bacterial tactics

How fascinating would it be to witness a bacterial infection unfold in real time?

A lab-grown 3D mini lung made from cow cells is helping scientists understand how a bacterium, *Mycobacterium bovis*, causes tuberculosis in cattle.

By keeping a close watch on bacterial tactics, they can develop better vaccines and more accurate tests to stop infections in their tracks.



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**A mini cow lung built in a lab sheds light on TB onset**



# Have you been eavesdropping? There's a protein doing the hard work

Did you know that about 430 million people around the world have trouble hearing?

In our inner ear, there's a special protein that converts sound waves to electrical signals that our brain can understand. But if this protein malfunctions, it can lead to hearing problems.

Scientists are investigating the cause of this phenomenon to pave the way for better treatments.



Photo Credits- Health Dialogues

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**Protein mutation linked to age-related hearing loss**



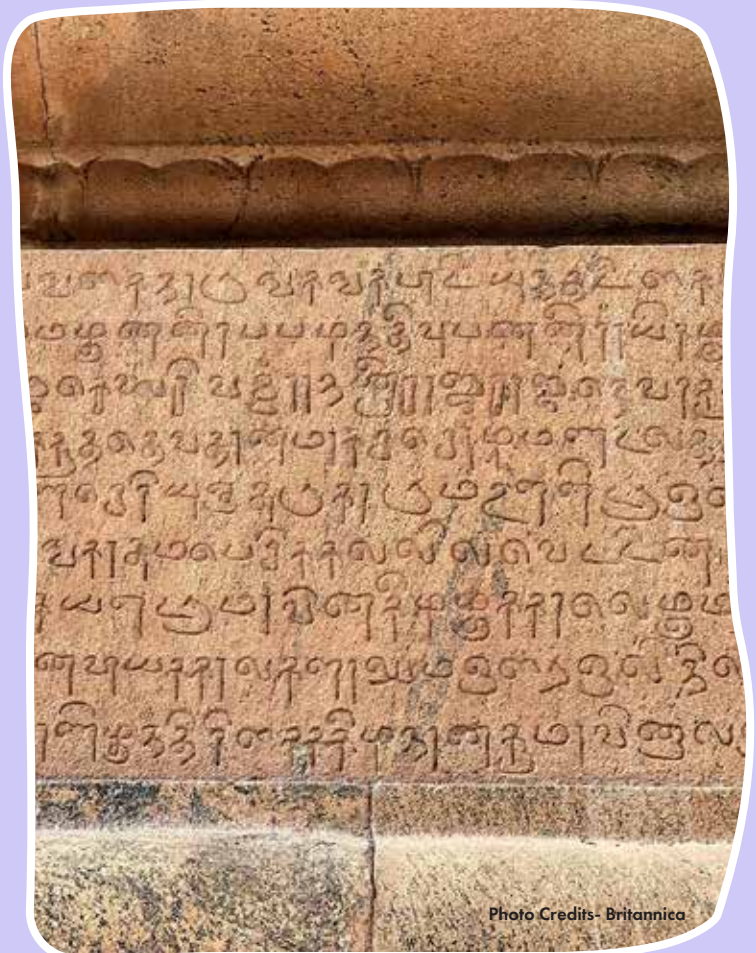


# AI unlocks ancient texts (and maybe Klingon too!)

A long time ago, Tamil was written without spaces between words, making it tricky for computers to read.

But now a new AI tool is helping crack the code and helping historians to uncover centuries-old literature.

Can ChatGPT crack Klingon?  
Do give it a try and let us know.  
You might join the  
Star Trek crew!



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**AI helps segment  
ancient Tamil text**





# Macmillan Budding Scientists

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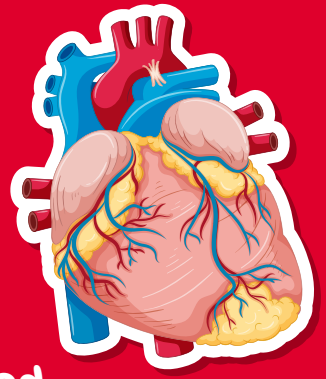
IN ASSOCIATION WITH **INDIAN INSTITUTES OF TECHNOLOGY**

## Scan & Register





# Fun Fact



Researchers are experimenting with 3D-printing to create real organs like blood vessels and even a heart.



Know a fun fact or working on a cool science project?

**Write to us at**

[macmillanmarketing@macmillaneducation.com](mailto:macmillanmarketing@macmillaneducation.com)

**We want to hear from you!**

## What are you curious about?

If there is something you are curious about, ping us at

<https://macmillaneducation.in/>

We will try to include it in the next issue!

For more science news, views, opinions, research highlights and podcasts, head to Nature India [www.nature.com/natindia](http://www.nature.com/natindia)