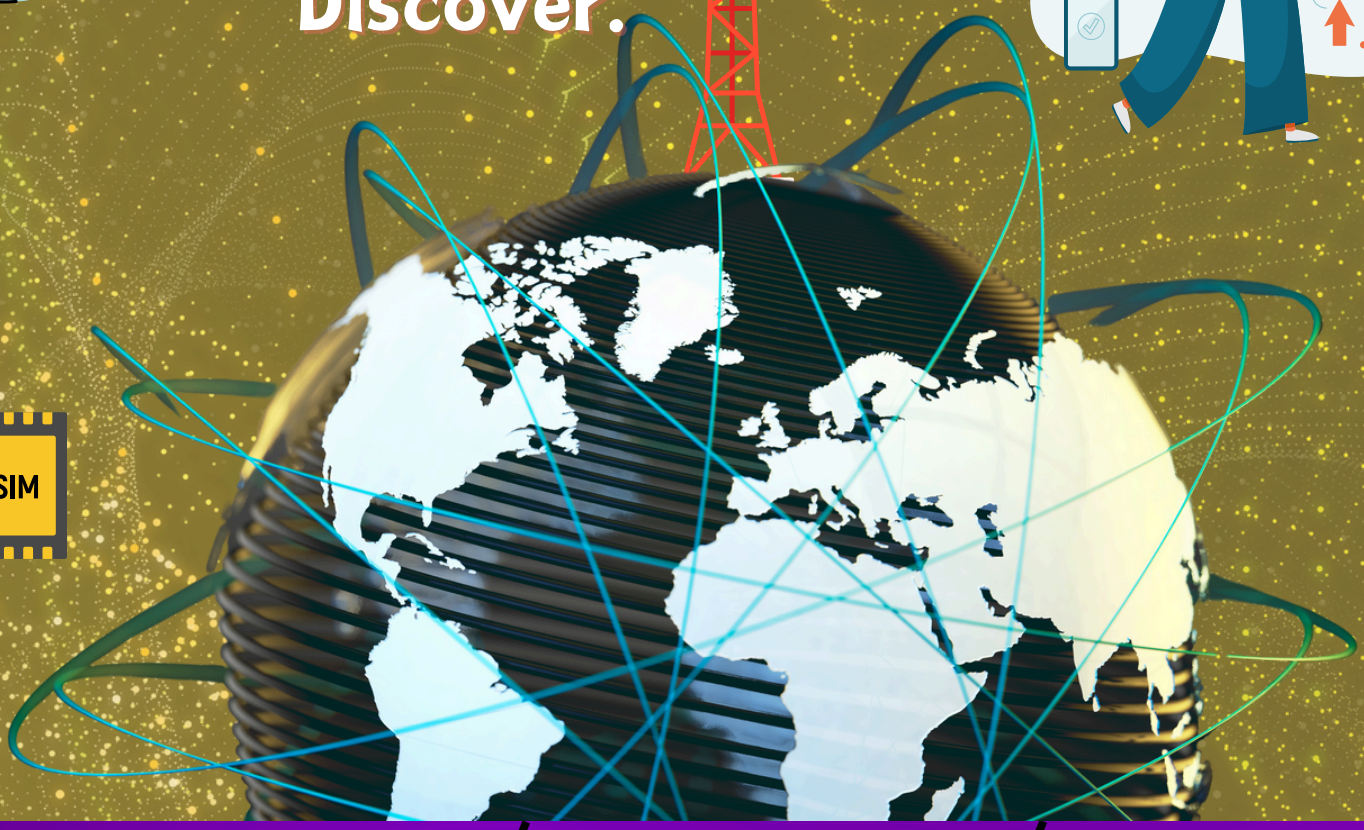
# The Curious Atom

by the The KK Times

Dream,
Draw,
Design,
Discover.




## Connecting Voices

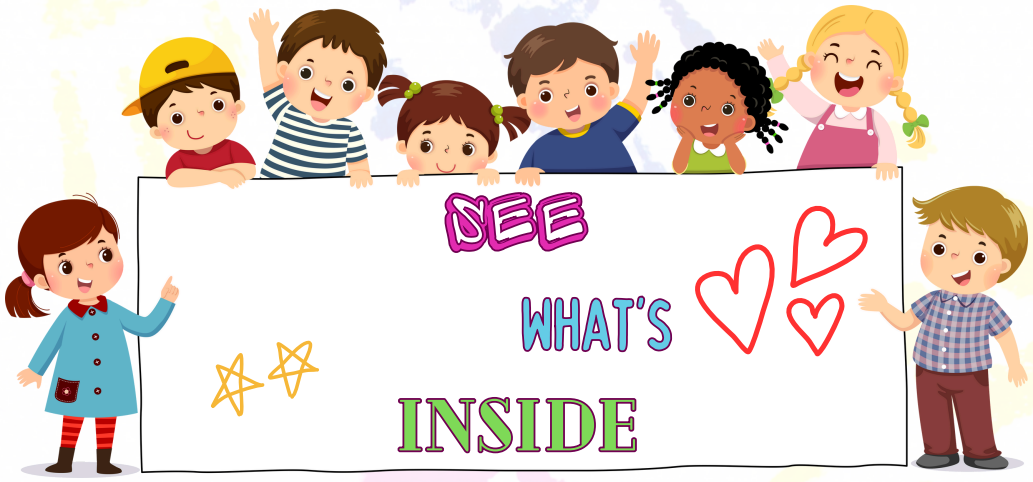
World Telecommunication Day is on 17th May.

## ABOUT THE COVER

*Explore the hidden world of telecommunications on our cover, featuring eSIMs, the power of 5G, a network of satellites and dishes, and the Earth illuminated by the web of connectivity.*

Pg 4

6G Device Prototype in Japan




**The Qurious Atom | Issue 10 | 31 May | Monthly | Ghaziabad**



## Note from the Editor:

Hey guys! This the 10th Edition of The Qurious Atom. It's time to unveil the invisible threads of communication around the world. Explore 'Telecommunication' with fun articles and activities. The Qurious Atom bursts with the future of communication and opens further area of research for school kids. We have introduced a new section this time- "Jungle Explorers", so be sure to read it.

Check out Page No.- for the CurioBuddy event #CurioCamps - an immersive storytelling session in collaboration with AB Creative Hut. For more events and activities keep visiting our website curiobuddy.com

This year, I am going to Jibbhi, Himachal Pradesh in my summer breaks. Where are you going? Would you like to join Mandy on her trip to the United Kingdom, where she finds out the buzzing communication science?

Science Champs, don't forget to submit your articles and answers for the next exciting edition.

Your friend, Kanira
World's Youngest Chief Editor

Next Issue of The Qurious Atom:
30 June 2024
Theme : "Science Safari"
Exploring Different Fields in Science



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# HOW TELECOMMUNICATION CONNECTS THE WORLD

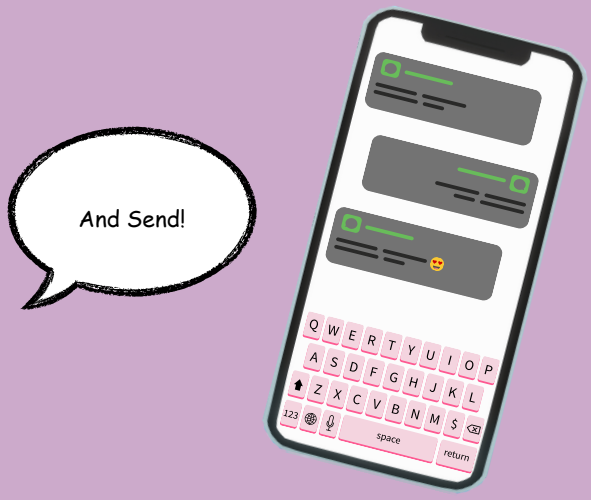
**Have you ever wondered how you can talk to your friends who live far away? Or how you can send a message to someone on your phone? It's all thanks to telecommunication!**

**When we want to communicate with someone, we use devices like phones, computers, and tablets. These devices send and receive messages through the internet, which is a global network of connected computers. The internet helps us send and receive messages, pictures, and videos quickly and easily.**

**The internet uses special pathways called "server routes" to deliver messages to the right person. It's like sending a secret message through a network of invisible roads. The internet's advanced routing system ensures that messages reach their destination quickly and efficiently. This complex system allows us to communicate with anyone in the world, no matter where they are.**

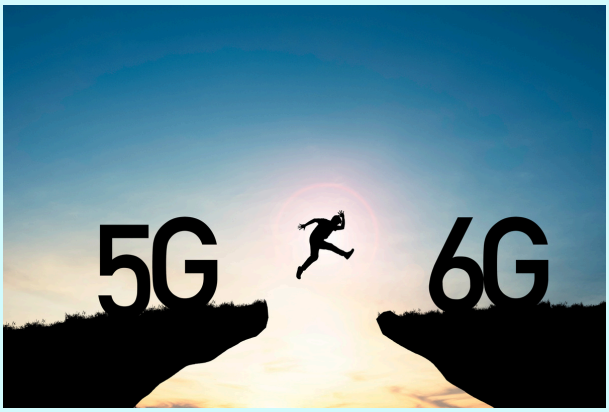
**The magic of telecommunication has made it easier than ever to stay in touch with friends and family, no matter where they are in the world. Whether far or near, we can still communicate with each other.**

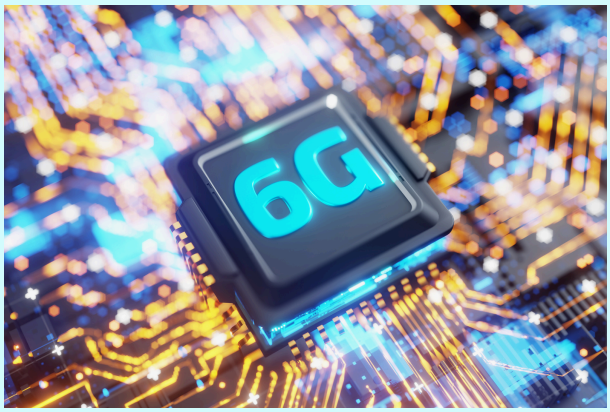

**Ways of Communication**




# 6G: The Next Generation of Mobile Technology?

**Japan has made a major breakthrough in mobile technology with the development of the world's first 6G prototype device. This innovative technology promises incredibly fast internet speeds, with data transmission rates of 100 gigabits per second (GBPS). This is 20 times faster than the current 5G standard, allowing for instant downloads and seamless virtual reality experiences.**




**The groundbreaking development of this technology is a result of a collaborative effort between Japan's leading telecom companies- DOCOMO, NTT Corporation, Fujitsu and NET Corporation. However, it's important to note that this is a single prototype device and not a commercially available network. Significant infrastructure development will be needed before 6G becomes a reality for everyday users.**

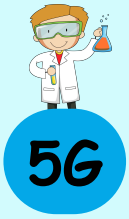
**6G network in Japan is expected to integrate AI deeply and will be critical in designing and optimising 6G architectures and operations, distinguishing it from 5G. High security, secrecy, and privacy are prioritised in 6G networks in Japan, a feature that is not as prominent in 5G networks in other countries.**

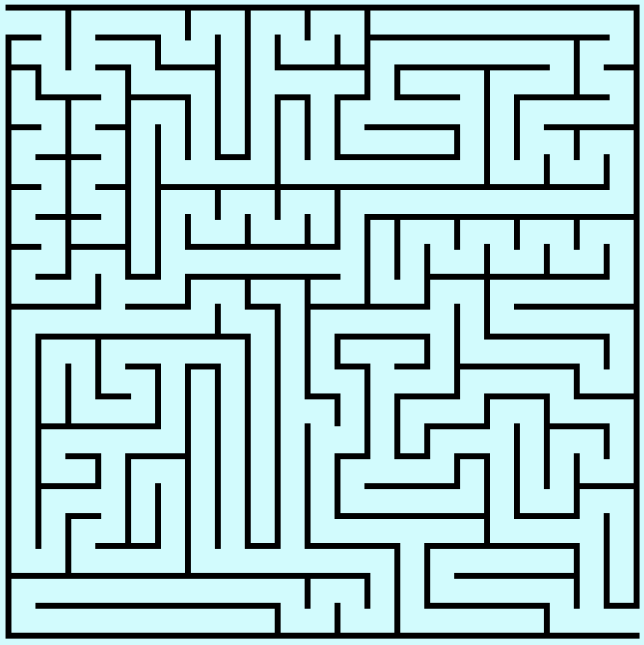
**One of the main challenges with 6G is signal strength, as higher frequency bands struggle to penetrate buildings and have shorter ranges. This means that 6G networks may require more towers to ensure consistent coverage, which could impact cost and implementation.**

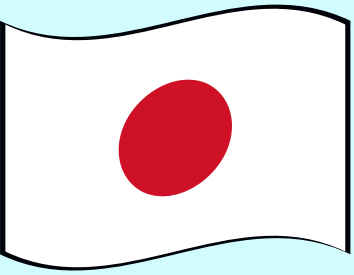

**For now, there's no need to replace your phone just yet. 5G technology is still under development and will likely be a major player for years to come. The unveiling of this 6G prototype marks a significant milestone in telecommunications, but it's still early days for this technology.**

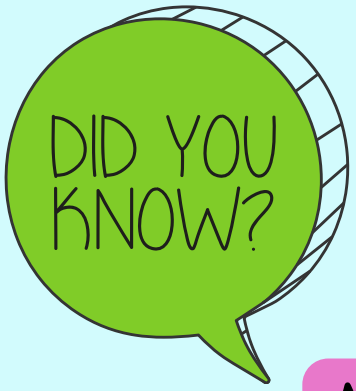

# ACTIVITY

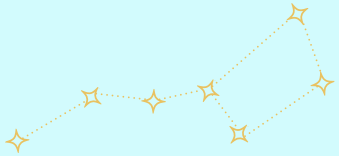
**Help the scientist upgrade from 5G to 6G.**



A rare planetary alignment will take place on June 3rd just before sunrise. Mercury, Mars, Jupiter, Saturn will be in a straight line visible to the human eye while Uranus and Neptune will still be in the line but harder to see.

# The Curious Chronicles of Jungle Grove

## Ch-9 "Summer Adventures: Mandy's Telecommunication Discovery"

STORY

As summer vacations began, Mandy the Monkey was ecstatic about her holiday to the United Kingdom. This time, she was traveling with her grandparents, Grandma Molly and Grandpa Max. She packed her suitcase with eager anticipation, ready to explore a new country with them. The journey was thrilling, and soon enough, Mandy found herself amidst the historic landmarks and lush landscapes of the UK.

After settling in, Mandy missed her home in Jungle Grove and decided to call her parents. Using her phone, she video-called Monica and Michael Monkey, and excitedly shared her experiences.

She told them about the magnificent Buckingham Palace, the fascinating British Museum, and the delightful afternoon tea she had enjoyed with her grandparents.

Curious about how she could see and hear her parents from so far away, Mandy asked her mother, "Mom, how does my voice and picture travel such a long distance so quickly?"

Monica smiled and explained, "That's telecommunication, Mandy. It's the process of transmitting information over distances using electronic devices like phones, computers, and satellites. It involves converting your voice and image into signals that travel through cables, radio waves, or even satellites, and then converting them back so the person on the other end can see and hear you."

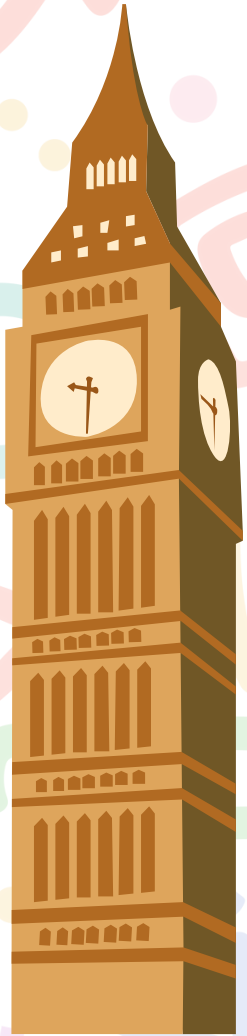
Intrigued, Mandy wanted to learn more. Just then, the online version of the Qurious Atom arrived in her inbox. This month's edition was all about communication, from ancient methods like smoke signals and carrier pigeons to modern technologies like fiber optics and the internet.

Mandy eagerly read through the articles, discovering how telegraphs and telephones revolutionized communication and how the internet now connects people across the globe instantly. The newsletter also included fun activities like mazes and puzzles related to communication technology, which Mandy enjoyed completing.

Inspired by her newfound knowledge, Mandy shared these fascinating facts with her grandparents during their explorations. They were impressed by how much she had learned and how she was applying it to understand the world around her.

As her holiday in the UK came to an end, Mandy was already looking forward to her next adventure. She and her family planned to visit Kenya, a land of diverse wildlife and stunning landscapes. Mandy couldn't wait to explore the savannas, see the magnificent animals, and learn about a different culture.

With her curiosity fueled and her knowledge expanded, Mandy was ready to embrace her next journey, knowing that no matter where she went, telecommunication would keep her connected to her loved ones back home.



# QUIZ!

1. **Where did Mandy go for vacation?**
2. **Who did she go with?**
3. **Fill in the blanks- Just then, the online version of the Qurious Atom arrived in her _____.**
4. **Name one of the monuments Mandy saw in the UK.**
5. **Where will Mandy go for her next vacation?**
6. **Where will you go on vacation?**

1. The UK; 2. Her grandparents; 3. Inbox; 4. The British Museum, Buckingham Palace; 5. Kenya

# I WONDER WHY?

## SOME BIRDS CAN'T FLY

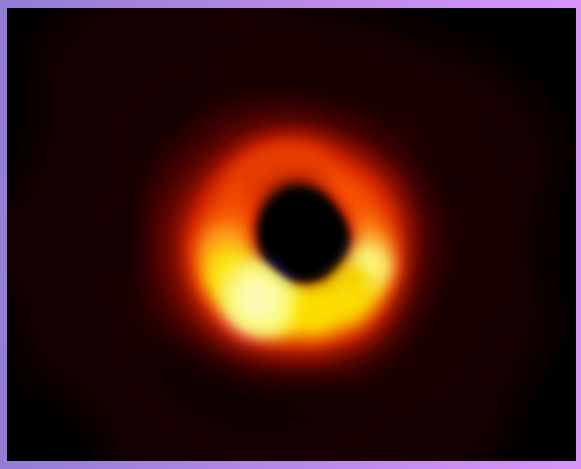
Some birds are unable to fly due to broken wings or other injuries. Some birds like penguins have different features and some birds are too heavy to fly.


## SOAP MAKES BUBBLES

Soap molecules when mixed with water create bubbles. They have two parts- one that loves water and one that hates it. When they combine, the opposite ends sandwich a thin layer of water, trapping a tiny pocket of air and forming a bubble.

# Space Mysteries: What's on the Other Side of a Black Hole?

Imagine a place where the laws of physics as we know them cease to apply, where time and space are twisted beyond recognition. This isn't a scene from a science fiction movie—it's the reality of black holes, one of the most intriguing and mysterious phenomena in the universe.



## What is a Black Hole?

A black hole is a region in space where the gravitational pull is so strong that nothing, not even light, can escape from it. This intense gravity is the result of a massive amount of matter being squeezed into a very small space. Think of it as packing the mass of a star ten times the size of our Sun into an area no larger than a city. The boundary around a black hole is called the event horizon—once you cross this line, there's no turning back.

## How Do Black Holes Form?

Most black holes form when massive stars reach the end of their life cycle. After burning through their nuclear fuel, these stars undergo a supernova explosion, shedding their outer layers. The core that remains collapses under its own gravity, forming a singularity—a point of infinite density—surrounded by the event horizon.

## What Lies Beyond the Event Horizon?

The inside of a black hole is a place of infinite curiosity and complexity. Once something crosses the event horizon, it's pulled inexorably toward the singularity at the center. The singularity is a one-dimensional point where gravity is so strong that space and time become distorted. The question of what lies beyond the event horizon has puzzled scientists for decades. Some theories suggest that black holes could be gateways to other parts of the universe or even other universes entirely. This idea is known as a wormhole—a tunnel-like structure that connects distant points in space and time.

## The Information Paradox

Another mystery surrounding black holes is the fate of information that falls into them. According to the laws of quantum mechanics, information cannot be destroyed. But what happens to the information when it crosses the event horizon? This conundrum is known as the information paradox and has led to heated debates among physicists.

Recent theories propose that information may be preserved in a two-dimensional holographic form on the event horizon, a concept known as the holographic principle. Alternatively, some suggest that information might leak out through a process called Hawking radiation, named after the physicist Stephen Hawking who proposed it.

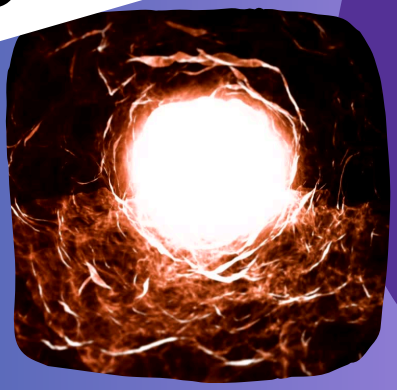
## The Search Continues

Black holes remain one of the most enigmatic objects in the cosmos. With advancements in technology and observational techniques, scientists continue to study these cosmic mysteries. The Event Horizon Telescope, for example, captured the first-ever image of a black hole in 2019, providing invaluable data to further our understanding.

As we explore the universe, black holes challenge our understanding of space, time, and the fundamental laws of physics. What lies on the other side of a black hole? For now, it remains one of the greatest mysteries in science, a puzzle waiting to be solved by the curious minds of future generations.

Black hole with nebula over colourful stars and cloud fields in outer space courtesy NASA.

# Wormholes: Science Fiction or Science Fact?



Wormholes are a staple of science fiction, often depicted as shortcuts for interstellar travel. In reality, the concept comes from Einstein's theory of general relativity, which allows for the possibility of such tunnels. However, the existence of wormholes remains purely theoretical. No evidence has been found to suggest that they exist, and even if they did, they might be inherently unstable and collapse before anything could pass through.


## CALLING ALL YOUNG SCIENTISTS AND EXPLORERS!

Get ready for a summer vacation unlike any other! This June, join CurioBuddy and AB Creative Hut for a time-traveling storytelling adventure that will spark your creativity and ignite your imagination!

**Prepare to:**

- Embark on a fantastical journey through time with captivating stories.
- Uncover the secrets of science hidden within fantastical narratives.
- Participate in interactive activities that will unleash your inner inventor!

**Limited seats available!**
Register now via email or WhatsApp to secure your spot.

## SPECIAL OFFER FOR CURIOBUDDY FOLLOWERS!

**CurioBuddy followers get an exclusive 30% discount on tickets!**

Follow us on social media for details on how to claim your discount. #CURIOCAMPS

Don't miss out on this incredible opportunity to explore the wonders of science and storytelling!

# Jungle Explorers

## Part 1
### Animal Friends

The jungle is a fascinating ecosystem, home to a vast array of animal species. Did you know that the jungle is home to over 400 species of mammals, including the majestic tiger, which is a apex predator? These big cats are expert hunters, using their incredible night vision to stalk their prey. The jungle is also home to a variety of primates, such as monkeys and apes, which play a crucial role in seed dispersal and forest regeneration. In fact, some species of monkeys, like the howler monkey, have been known to disperse seeds up to 30 meters away from their original location. Other animals, like the colorful macaw parrot, are important pollinators and seed dispersers. The jungle is also a habitat for many species of reptiles, amphibians, and insects, including the iconic poison dart frog and the majestic Goliath beetle. Each of these species plays a vital role in maintaining the delicate balance of the jungle ecosystem, and it's essential that we work to protect and conserve this incredible biodiversity

## Fun Fact

**International Day for Biological Diversity is held on May 22 annually.**

Check out Part 2 and 3 in the next edition. Stay curious, stay creative, stay confident.

# Telecommunication FACTS

- Telecommunication enables global communication through internet, phone, and satellite networks.
- The first phone call was made in 1876 by Bell.
- The first text message was sent in 1992.
- 4.5 billion people use mobile phones, with 5.2 billion mobile phone subscriptions worldwide.
- Telecommunication has revolutionised the way we connect, work, and live.
- Soon, we shall have 6G communication networks around the world.

## What is NFC?

Near Field Communication (NFC) allows devices to communicate over short distances. It's used in mobile devices, payment systems, and wearables to transfer data, make payments, and share files. With NFC, you can tap your phone to a payment terminal to make a purchase or share files with another device.

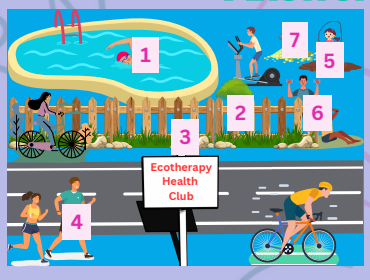
## Spot the difference

Spot the differences between the two scenes.
Answers in the next edition.

A

B

### Spot The Difference.
### Answer of April Issue

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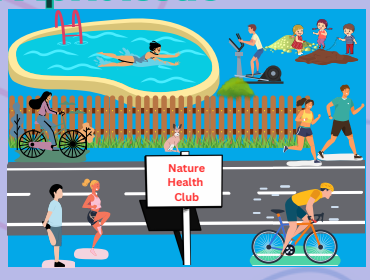


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