



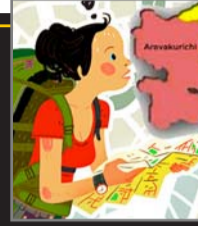
# THE TIMES OF INDIA

[www.toistudent.com](http://www.toistudent.com)
**TODAY'S  
EDITION**

➤ As Concepts to Classrooms reaches Z, the last alphabet, know how meaningful 'zero' is, representing a full circle  
**PAGE 2**



➤ Did you know the simple joys of being in a village with your loved ones can create the best memories?  
**PAGE 3**



➤ Shuttler PV Sindhu leads India's campaign at the WTF  
**PAGE 4**



**STUDENT EDITION**  
WEDNESDAY, DECEMBER 1, 2021



**OMICRON RISK "VERY HIGH", ALERTS WHO**



The Omicron coronavirus variant is likely to spread internationally, posing a "very high" global risk of infection surges that could have "severe consequences" in some areas, the World Health Organisation (WHO) said on Monday. The UN agency has urged its 194 member states to accelerate vaccination of high-priority groups in anticipation of increased case numbers to ensure that mitigation plans are in place to maintain essential health services.

## INDIA WATCH

Amid mounting fear over Omicron, an expert committee on Covid immunisation is considering recommending an "additional dose" to those who are immunocompromised or are elderly and at high risk of infection or death due to Covid-19 infection, an official source said. A final decision on the issue, however, will be taken by the National Technical Advisory Group on Immunisation next week, which will be then considered by the health ministry for approval. It would be too early as yet to speculate on just when the doses will be given.

**CLICK HERE: PAGE 1 AND 2**

## Spotlight

# PARAG AGRAWAL New CEO of Twitter

Jack Dorsey stepped down as the CEO of Twitter on Monday, the social media site he co-founded in 2006 and navigated through the tumultuous years of the Trump administration. He has been replaced by Indian-origin Parag Agrawal, who as the company's chief technology officer had recently been working on technologies associated with cryptocurrencies, which have become a fascination of the tech industry's power brokers, including Dorsey. Dorsey will stay on the board of the San Francisco-based company until his term expires in 2022.



## THE MAN

■ Parag, aged 37, is an alumnus of the Indian Institute of Technology, Mumbai, where he did his Bachelors in Engineering in computer science. He moved to the US for further studies, with his doctorate coming from Stanford University based in California

■ Parag joined Twitter in 2011. Before that, he briefly worked at Microsoft, AT&T and Yahoo. In all the three companies, his work was mostly research-oriented. Initially, at Twitter, he worked on ad-related products, but gradually he also dabbled in artificial intelligence

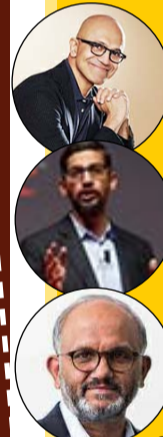


The world is watching us right now, even more than they have before. Lots of people are going to have different views and opinions about today's news. It is because they care about Twitter and future, and it's a signal that the wire we do here matter. Let's show the world Twitter's full potential

**Parag Agrawal**

## Parag Agrawal joins elite club of Indian-origin CEOs

Parag Agrawal has joined the high-profile league of Indian and Indian origin honchos, who are calling the shots at global corporations. Agarwal joins Microsoft CEO Satya Nadella, Alphabet and Google CEO Sundar Pichai, Adobe President and CEO Shantanu Narayana and IBM Group CEO Arvind Krishna, who are currently leading global corporations. Besides, the elite club has other honchos like Mastercard's CEO Ajay Banga, Arista Networks' CEO and President Jayshree V Ullal, Micron Technology's CEO Sanjay Mehrotra and Reckitt Benckiser's CEO Laxman Narasimhan



## 'Spider-Man: No Way Home' to release in India a day ahead of US



**Entertainment**

'Spider-Man: No Way Home', the new Spider-Man film starring Tom Holland and Zendaya, is all set to release in India on December 16, a day ahead of its release in the US. "We have some exciting news for all the Spider-Man & Marvel fans! Our favourite superhero will be swinging in one day earlier than the US! Catch #SpiderManNoWayHome on December 16 in English, Hindi, Tamil & Telugu," tweeted Sony Pictures India.

■ In the film, with Spider-Man's identity now revealed, Peter asks Doctor Strange for help. When a spell goes wrong, dangerous foes from other worlds start to appear, forcing Peter to discover what it truly means to be Spider-Man

■ The film will also feature appearances from Benedict Cumberbatch as Doctor Strange, Jacob Batalon as Ned Leeds and Marisa Tomei as Aunt May



# Lionel Messi Wins Record Seventh Ballon d'Or

Lionel Messi won the men's Ballon d'Or award for a record-extending seventh time at a ceremony in Paris on Monday. Messi won the last edition of the Ballon d'Or in 2019 before last year's awards were cancelled due to the pandemic.

**HE ALSO WON IN 2009, 2010, 2011, 2012 AND IN 2015**

The 34-year-old scored 38 goals in 48 games last season for Barcelona and won the Copa del Rey before captaining Argentina to Copa America glory in July. That was the first major international title of his glittering career, which had been spent entirely with Barcelona before his tearful departure from the Camp Nou in August and subsequent move to Paris Saint-Germain

He has now won the Ballon d'Or twice more than his old rival Cristiano Ronaldo – between them they have won 12 of the last 13 editions with the exception coming in 2018 when Luka Modric claimed the prize



► More on pg 4

# World's tallest railway bridge pier to come up in Manipur

The Indian Railways is constructing the world's tallest bridge pier (an upright support for a structure or superstructure) in Manipur. The ambitious project in Manipur is part of the 111 km-long Jiribam-Imphal railway line to connect the capital of Manipur with the broad gauge network of the country.

■ The bridge, which is being built at a pier height of 141 metres, will surpass the existing record of 139 metre of Mala - Rijeka viaduct, Montenegro in Europe. ■ With the completion of the project, the 111 km distance will be covered in 2-2.5 hours. Presently, the distance between Jiribam-Imphal (NH-37) is 220 km, which takes about 10-12 hours of travelling. The work on the bridge will be completed by December 2023



## COST

The project, which consists of 61 per cent of tunnels, will cost ₹ 374 crore approximately, according to the chief engineer

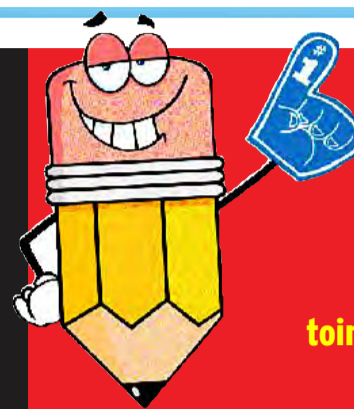
## BOOK

## Two Indians 'booked' for Emile Guimet Prize for Asian Literature 2021

Two Indians – Deepa Anappara and Geetanjali Shree – are among the five nominees for this year's 5,000 euro Emile Guimet Prize for Asian Literature for works translated into French, an award that is supported by the Oxford Book Store. The other nominees are Hideo Yakuda and Mitsuyo Kakuta from Japan and NG Kim Chew from Malaysia. The winner will be announced on January 20, 2022.



Beginning the journey  
of learning in an  
alphabetical order, Times  
NIE takes you through  
one concept from each  
subject every week



TEACHERS, IF YOU  
HAVE A CONCEPT  
THAT CAN CHANGE  
A CLASSROOM,  
SHARE IT ON

toinie175@gmail.com WITH  
YOUR PHOTOGRAPH

# CLASSROOMS TO EXPERIENCE ZONES

## GEOGRAPHY

### ZERO DEGREES

It is by pure coincidence that the coordinate of 0 degrees latitude, 0 degrees longitude falls in the middle of a little-known body of water,

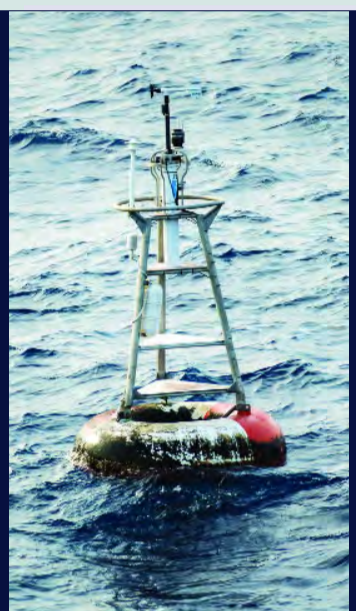
The equator and prime meridian are both invisible lines on the Earth that help us navigate. Though invisible, the equator (0 degrees latitude) is a very real location that divides the world into two hemispheres. The prime meridian (0 degrees longitude), on the other hand, was created by scholars who needed reference point to begin noting east-west points on the map.



about 380 miles south of Ghana and 670 miles west of Gabon. This location is in the tropical waters of the eastern Atlantic Ocean, in an area called the Gulf of Guinea. The Gulf of Guinea is part of the western edge of the African tectonic plate. Most notably, according to the theory of continental drift, this may have been the location where South America and Africa were once joined. Natural Earth GIS Data also added an imaginary island to the 0,0 location in 2011 known as the Null Island. Since its creation, through fiction, the 'island' has been given its own geography, flag, and history.

### The Story Of Null Island

Very few people in the world will ever pass over the point where the Equator and Prime Meridian meet. It requires a boat and a good navigator, so, unlike the Prime Meridian Line in Greenwich, there is not much call for tourism at this location. The spot, also known as the Null Island, is marked with a weather buoy (Station 13010-Soul). It is placed at the exact location of 0 degrees latitude, 0 degrees longitude, and is owned and maintained by the Prediction and Research Moored Array in the Atlantic (PIRATA).



Source: Thoughtco

## CHEMISTRY

### ZEOLITES



Zeolites are microporous, aluminosilicate minerals. It is commonly used as commercial absorbents and catalysts. The name zeolite was given in 1756 by Swedish mineralogist Axel Fredrik Cronstedt. He called the material zeolite, from the Greek *zéō*, meaning 'to boil' and *lithos*, meaning 'stone'. Natural zeolites form where volcanic rocks and ash react with alkaline groundwater. Zeolites found in nature are almost never pure. They are contaminated by other minerals, metals, quartz, or other zeolites.

### WHERE IS IT FOUND?

For many years, zeolite minerals were thought to be found only in vugs and fissures in volcanic rock. In the 1950s, however, zeolites were found in abundance in altered volcanic tuff in the western US and volcanogenic marine tuffs in Italy and Japan.



### USES

Zeolites can be used in domestic and commercial water purification, water softening, and other uses. Zeolites were also found to help silver naturally emit light, which may compete with fluorescent lights or LEDs. Zeolites can be used to store solar heat harvested from solar thermal collectors. The largest use for zeolite is the global laundry detergent market.



### FUN FACTS

- The name 'zeolite' is derived from Greek words meaning 'boiling stones' because the minerals frothed when heated to high temperatures.
- Zeolites give off heat when rehydrated. An old field test to determine if a rock sample contained zeolites was to see if a rock chip heated up when placed on the tongue.
- Zeolites adsorb ethylene and are used to prolong the shelf-life of vegetables and fruit, which emit ethylene as they ripen.
- Zeolites were used to adsorb radioactive isotopes from contaminated cooling water spilled at the Fukushima nuclear power plant after the plant was damaged in the March 2011 magnitude-9 earthquake in Japan.
- The maximum and minimum value of a function – local (within a limited range of the variables) or global (over the entire range of values). Finding maxima and minima is of great practical and scientific value, and it's the value of the function at which the slope is zero (and turns positive or negative thereafter). Indeed, the most important characteristics of non-linear functions is their slope, the continuously changing slope to be precise; the slope is the curve/function! To the point, calculus gives us the 'formula' for finding instantaneous rate of change. Once again, there is far more to calculus but this presents the key idea of calculus.

## LANGUAGE

### Zoomorphism

By Kartik Bajoria  
Jaipur-based  
Communication Skills  
Educator & Writer

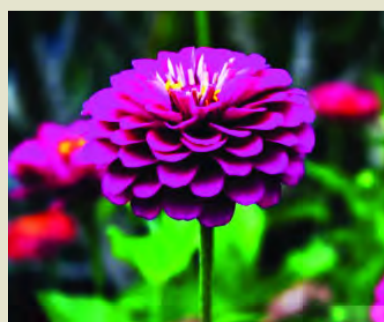


Zoomorphism is an extremely interesting term. In fact, it is the opposite of a term called Anthropomorphism. In the latter, one assigns human qualities, traits or characteristics to animals. In the former, one takes animal traits and assigns them to non-animals (humans) or non-animal situations. It is essentially using animals, animal traits and behaviour in order to better describe a person or a situation.

The simplest way of understanding this is to call a friend who never has time, a BUSY BEE! Here, we have taken a very well established and classic attribute of the perennially hard-at-work Bee and used it to describe a person – thus making this a Zoomorphism. It is also very simple to remember, since the word 'Zoo' will always and instantly recall animals!

What is also very striking, particularly for students and fans and followers of Comics is that many superheroes are a physical manifestation of Zoomorphism – the obvious examples that immediately spring to mind include the iconic and beloved Spiderman, Batman, Antman, Catwoman and Black Panther. Now let us examine an example of Zoomorphism in terms of a relatable life situation. Read this sentence – Kartik's resignation ruffled many feathers in the company! The expression 'ruffled many feathers', which is used to communicate 'caught people's attention and made headlines' is a perfect example of a zoomorphism being used in a situational context. It would be a fun and immersive exercise to try and write down sentences of your own that use zoomorphism in people and situations.

### ZINNIA



Zinnia is a genus of the family Asteraceae, containing about 20 species of annual and perennial plants, native primarily to North America with a few species in South America. The most popular species is 'Zinnia elegans', which is native to Mexico.

## MATHS

By Sandeep Srivastava  
Educator since 20 yrs, he  
specialises in making  
Maths easy and fun



### ZERO (LIMIT, CALCULUS)

Perhaps half of modern math needs real numbers and continuity – the realities that are best addressed by calculus. Clearly, calculus can't even be introduced in an article. So, the scope of this article is limited to appreciating the unique need of calculus in quantifying 'real-world' things (natural, social, and even economics/management sciences), and conceptually equip readers to easily, and independently dig deeper in calculus if need be. Indeed, calculus is 'real analysis'.

The invention of calculus resolved one of the biggest challenges that mathematicians (and scientists) faced for nearly two millennia – how to correctly define and predict 'dynamic situations' (such as diffusion of gases/smoke/perfume, volume of a heap of something, stress points in skyscrapers and bridges, electric circuits with capacitors or inductors). The 'answers' given by calculus are so real that the need for what we call calculus was apparent in the development of the method of exhaustion around fifth century BCE. It may help to know that formal math education is significantly responsible for the 'tough' label attached to calculus. However, there is nothing intrinsic to calculus that actually requires trigonometry or any other difficult math. Indeed, the only real prerequisite to understand calculus is algebra.

Calculus is not just the omnipresent domain of math, it's an apt reminder of the superlative human thought. In math, it is matched only by Euclidean geometry (it was the first, and unparalleled foundation for a domain of knowledge by one man).

#### Zero made arithmetic move from abacus to page

There was no zero in abacus, but its design facilitated the arithmetic operations. The Roman numerals, used exclusively till mid of the second millennium in Europe, don't have zero as a numeral.

#### Power to people

Zero gave people power as they could do calculations without the need for an abacus (it needed training and practice to be used).

#### Power to Newton to start a 'new math'

No less revolutionary change due to zero was that it drove Isaac Newton, in the mid-17th century, to invent calculus. Newton used intuitively attractive idea of infinitesimal quantity that is not zero but nearly zero to calculate 'instantaneous' rate of change of things that are changing.

#### Welcome to the (dreadful) calculus

All things around us change over time, and calculus helps us describe how things change – their rate of change. For example, calculus helps us find instantaneous acceleration of a free-falling body (i.e., falling under gravity only); the body

experiences increasing acceleration every second. Calculus is also the way we find the length, area and volume of curved surfaces, objects, and spaces.

#### Math to the rescue of science

On the face of it science couldn't talk of instantaneous velocity or acceleration, when time and distance are nearly imperceptible, zero; there the physical measurement is a challenge. But math doesn't have limitation of 'smallest number possible', there is always a new real number between any two real numbers; mathematically expressing scientific realities allows much powerful analysis and computations. Math gifted science completely new possibilities – avoiding division by zero, using division by infinites and so on.

Calculus uses two inventive concepts – limit, and continuity – to find rate of change in quantities at any instant (and thus, instantaneous values of variable quantities) and to find magnitudes of quantities between two instants, or any other variable.

#### Daily life usage of math

Limited to numbers and arithmetic, very limited algebra if at all; for example, counting and discreet measurements of things/money/speed/time, 'average speed over a time period', area and volume of objects such as cubes, cuboids, spheres, etc. A sad commentary of the 'math in our lives' – we hardly deal with 'continuous quantities' (i.e., those changing at all times and by unknown amounts) in everyday routine, it is all about discrete quantities (i.e., those changing in expected/know quantities, at expected/know times). Thus, constant rate of change, at least over a discrete period, i.e., linear variation is all that we know. Science and technology is still limited to a minuscule proportion of population.

#### Functions

Functions is what we use to mathematically describe these real world relationships. They are used to capture how we model change, how we 'see, know' change, away from the reality they represent.

It may be added that 'function' must not be new, or intimidating, because they are the broader category for algebraic expressions and equations. Polynomials are functions.

**Functions are Input-Processing-Output** expressions specific to situations, and their output is ordered pairs (series of two numbers much like coordinate pairs); for example, the algebraic function for area of a square is  $x^2$  and it generates ordered pairs – (side, area).

#### Functions – the two kinds

The world of polynomials we know are the one kind – discrete functions; this is the domain of algebra.

**The other kind** – continuous functions; variables and their values are continuous (variables such as acceleration of a vehicle, magnetic field of a piece of wire, etc. and these values are real numbers). This is the domain of calculus.

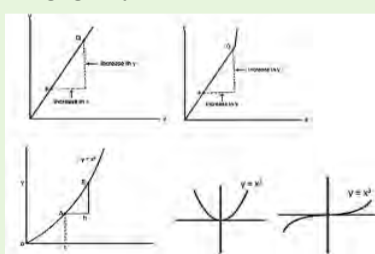
**Algebra Versus Calculus** – New knowledge on

Dimensions	Similarity	Differences
Measure slope of geometric figures	Both do	Algebra is for straight lines and calculus for curves
Measure length, area, and volume	Both do	Algebra is for straight lines, polygons, and some definite geometries and calculus is for curved shapes and objects
Measure direction, speed, distance, acceleration	Both do	Algebra is about rectilinear motion, 'average speed' and calculus is about curvilinear motion and instantaneous speed etc.
Measure work done by a force, mass of a body	Both do	Algebra is about constant density and force situations and calculus is about varying density and force situations
Dealing with functions	Both do	Algebra is about finding value of the function at a point and calculus its slope at any point

The complementary relationship of the two is writ large. No wonder algebra is the only true pre-requisite for calculus, for example, to be able to appreciate the idea and measurement of area, volume, acceleration, etc.

#### Two kinds of functions, graphically

The straight line functions carry a rate of change that is constant (except when the slope of the lines change, as is the second straight line graph after the point Q). The curved function shows a relationship when the rate of change is constantly changing – the slope of the graph is changing every 'instant'.



#### The slope of functions is very important

Slope of a function gives the rate of change of the function; it is best evaluated at a given point. It gives away the following simple information about a function (of course, there are more):

- The direction of change, increasing or decreasing.
- The degree of sensitivity of the dependent variable on the independent, i.e., the quantum of change in the former due to a small change in the later. For example, a slope of 4 at a point means the y-axis will grow 4 times the (small) change in x-axis.
- Determining if the rate is 0, or 1 - two special relationships of the variables; and how fast the function may be approaching the value of 0.
- Compare any set of functions to know if they are parallel, perpendicular, or converging, and the rate of convergence.

## BOTANY

### ZANTEDESCHIA

Zantedeschia is a genus in the family Araceae, native to southern Africa. The genus contains 8 species and numerous cultivars of herbaceous perennials, divided into two main types: hardier outdoor forms with striking white flowers, called Arum Lilies, and the more tender forms with white-spotted leaves and colourful flowers, commonly known as Calla Lilies. Zantedeschia is widely popular and a beautiful addition to any garden. These plants can be grown in beds, borders, containers, but also in water (Zantedeschia aethiopica).



### ZYGOPETALUM

Zygopetalum is a genus of about 15 species of flowering plants in the family Orchidaceae, native to South America. This plant produces waxy-looking, exotic patterned and coloured blooms. The blooms are

strongly scented and have greenish-brown petals and sepals, and purple colour on their lips. These exotic orchids occur as both terrestrial and epiphytic, mainly in cooler high altitude regions.

### ZEPHYRANTHES

Zephyranthes is a genus of about 90 species of flowering plants, mostly perennials, belonging to the Amaryllidaceae family. They are native to southeastern United States, Central America and South America.

These plants have grass-like foliage and erect flower stalks that support a single flower consisting of six or eight petals. The flowers are funnel-shaped and more often appears in spring and summer. These beautiful flowers range from yellow through pink to white and can fit in any garden. Some species have sweet fragrance which spread happiness and joy.



## Propagating physical and mental fitness

**H**ansraj Model School, Punjabi Bagh takes immense pride in promoting a week-long celebration of health and well-being under the flagship programme of Fit India initiated by the honourable Prime Minister to propagate and strengthen physical and mental fitness among all. The Fit India Week carnival commenced on November 22 on the virtual platform under the guidance of our principal Heemal Handoo Bhat who puts in conscious efforts to promote awareness for health care among all.

The celebrations of Fit India

Week concluded on November 26 on a promising note. The inaugural session of the third consecutive season gave a befitting start to Fit India Week. An amazing amalgamation of dance-inspired physical workouts celebrating 'Azadi Ka Amrit Mahotsav' was in sync with the idea of integrating learning with sports and art.

An online quiz based on fitness, health, diet, and sports drew the attention of not only students but also their family members, thus encouraging students to keep themselves updated with the latest developments in the field of sports



and games. The enthusiasm of proud winners heightened after being awarded the e-certificates. Fitness and yoga meditation sessions for the students, parents and teachers were thoroughly enjoyed and received enthusiastic participation.

The week concluded with a pledge taken by the students to keep themselves fit and healthy and become an asset to the nation. We take pride in acknowledging that sports is an integral part of the school curriculum and provides well-equipped facilities for students all year round.

## Children's Day celebration at St Angel's

**I**t is said 'Childhood is the best of all the seasons of life, and the longer it lasts with happy memories, the stronger the emotional stability in adulthood.'

A day marking childhood was celebrated with fun and frolic at **St Angel's School**, Sec-45, Gurugram on November 12. It all began with a special school assembly wherein the teachers as students conducted the entire assembly.

Teachers gave power packed performances such as dancing, singing, aerobics and yoga in order to express their love and affection for them. A stand-up comedy depicting the importance of uniform and discipline by our very own head of school and coordinators was the showstopper.



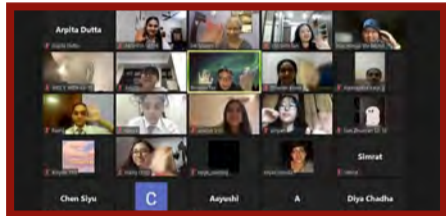
Students couldn't stop cheering for their teachers. The atmosphere was buzzing with excitement. Sonia Mcpherson, head of school, mentioned the significance behind the celebration. It was appropriate to felicitate Mukul Dagar of class XII for bagging silver medal in All India Seiko Kai Karate Championship and for bringing the laurel to the school. The day ended with the distribution of chocolates to all the students.

## EXCHANGING CULTURES

**P**aolo Coelho once said, "Culture makes people understand each other better. And if they understand each other better in their soul, it is easier to overcome barriers."

The third virtual session between **St Mark's Girls Sr Sec School** and **Nanyang Girls High School**, Singapore took place online. In the Zoom session, the students of the Singa-

porean school shared a part of their culture through a presentation showcasing their food habits, their festivals, their choic-



es of music etc. Our students discovered that our traditions might be very different, yet so similar.

Next, the students of our school shared their Diwali experiences, the most important and jovious festival of the Indian culture. The students shared glimpses of their celebration through the rangoli patterns, and decorations and also shared how this time the celebration was different from the last time. It was, indeed, an enriching session where both the schools explored a lot about each other's country.

## Children: Fragrance of love in every season

**T**here is no garden as beautiful as childhood. A day marking childhood was celebrated with fun and frolic at **ASN International School**, Mayur Vihar, Phase 1. It all began with a special assembly wherein the teachers stepped in to the shoes of our students and conducted the entire assembly right from prayer and significance of the day. A video encapsulating a plethora of events- songs, skits, games, dance performances was released for students on November 13 virtually, a day before Children's Day.



The celebration began with greeting the children on the special day, a day to celebrate the bond between teachers and students. This was followed by several performances to delight, entertain and regale the students. A few soulful renditions of songs by the team of teachers enthralled the students. Yet another programme, which

made the children, sit up and enjoy, was the beautifully choreographed dance presented by the teachers.

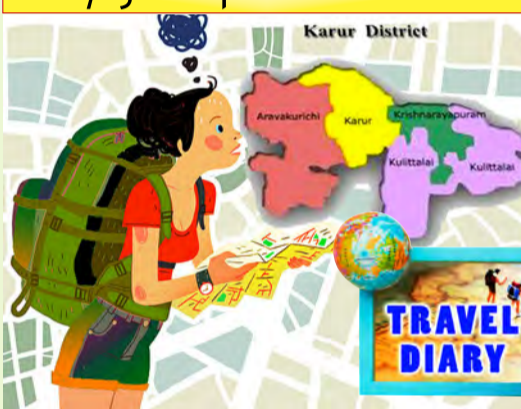
Soon after watching the video, the students' messages poured in, thanking the teachers profusely for making Children's Day 2021 so special. The heartfelt appreciation, likes and comments by the students are a testimony to the grand success of the digital celebration. The school heads Shivani Khanna and Priyanka joined in applauding the teachers for putting up a wonderful show.

## An unplanned visit to

## Karvazhi

### My grandpa's hometown

**I**would like to take you to a beautiful village called Karvazhi in Karur District. It is so close to my heart because it's my grandpa's hometown. My grandpa moved out of Karvazhi and settled in Karur town around 40 years ago. Every time I visit my grandparents' place, my grandpa used to share his cherishing childhood memories of Karvazhi. Whenever he talks about the place I could see the excitement in his eyes. The most surprising thing about that place is Mary Paatti, because she is the only person living there all alone. All others moved out of the village for various reasons and settled in towns and cities. Though we planned many times to visit Karvazhi, we could not make it. Last year, when we were travelling to my aunt's place, all of a sudden my grandpa came with the idea of visiting Karvazhi before reaching my aunt's house. I was super excited about this unexpected plan. Our car turned towards a single road from the highway, which leads to Karvazhi. The road was surrounded by green trees and



**STEPHANIA ANGEL S**, class VI, Shree Niketan Patasala, West Tambaram, Chennai.

paddy fields for about 7 km. It was a feast to the eyes. We stopped the car and enjoyed the beauty of nature. It was beyond my imagination. Enjoying nature, we didn't even realise that we reached the village so soon. After reaching Karvazhi we could only see the ruined houses, desolated streets. Finally, we went to Mary Paatti's house which was in the middle of the village. As soon as she saw my grandpa she recognised him and received us with much joy. She hugged me so tight and kissed my forehead with love. She served us yummy buttermilk. I was waiting to ask her a question that, why is she staying all alone in that ruined village? She replied with a smile that the bond she has with that village didn't let her move out of that place even with her children in towns. After spending some precious time there, we left the place heavy hearted. I wish to go there often to create unforgettable memories.

## Technology is creating inequalities

**I**strongly assert that technology creates several opportunities. Indeed today's technologies are a great boon to the fashionable society. "We live in a world defined by the rapid pace of technological changes" says Jerome Powell. It's true that technology has been updating itself every moment. The relationship between technology and inequality is multifaceted. According to the United Nations, technology has enhanced productivity, accelerated economic growth, enabled knowledge and information sharing. It also had increased access to basic services. Nevertheless it is the cause for inequalities too. Technology being a

**FOR** key-driver of aggregate economic growth through productivity also has a varying contribution across countries. The advancements in technology have caused inequality of outcome, inequality of opportunities and inequality of impact as it is skill-biased. Though we live in a technologically advanced society, it's still obvious that the poor are poor and the rich are rich. The least developed and developing countries lack access to these advancements and are lagging behind. Moreover artificial intelligence has taken over physical labour too. Hence the potential of technology to reduce inequality in opportunities is vast but is not automatic. It largely depends on the capabilities of the poor to access and use technology to their need. It isn't destroying opportunities but is increasing inequality in society.

**EASHAA R**, class XI, Bethel MHSS, Chennai



**AGAINST** In today's world, technology is an open door where people, irrespective of any social barrier, connect and suck up what could simplify their lives. Technology is never constrained to a particular group or a specific place and cannot be so. It is a mammoth ocean where no boundaries can arise to trigger inequality. A clear example of this would be the recent news of youths from the remote villages of our country becoming programmers at MNCs. With bills like the internet for all act of 2021 in the States, initiatives have been hooting up

to bridge the accessibility gap. Technology has no points to connect with gender inequality since it is very gender-neutral. Education available online at free of cost will play the role of an anchor to the mighty ship of opportunities. If truth be told, technology is the key to shrinking the prevailing inequality in society. It gives you ample space to express yourself

I conclude by stating that technology does not create inequalities but rather help in decreasing them. It's no longer only to them or they but to all and sundry!

**KATHERINE OLIVIA R**, class XI, Bethel MHSS, Chennai.

## Student Corner



**ARNAV VERMA**, class V D, Ryan International School, Sector-40, Gurugram



**YAVNIK**, class III C, Ryan International School, Sector-40, Gurugram

## Spreading eco-consciousness and sustainability

**D**PSG, Palam Vihar has always been known for organising special events on Children's Day. This year's celebration 'Rainbow-Rise, radiate and rejuvenate' witnessed a plethora of inter-house competitions held on November 12 like jewellery designing, mannequin draping and ramp walk. The objective was to facilitate and internalise sustainable environmental goals as a tribute to Jawaharlal Nehru and celebrating childhood.



sporting eco-friendly gowns, dresses, traditional and costume jewellery using recycled, natural and biodegradable products. Learners got the opportunity to revive the fun after the pandemic and filled the front lawns of the school with laughter.

It was sheer joy to watch the budding artists at their creative best. Other innovative and fun-filled games such as 'Stock your asset', 'Dress up and be sporty' 'Catch your fate' and the popular 'Lemon and spoon race' had the audience cheering for more.

## Importance of constitution

**R**yan International School, Sec-40 Gurugram has always believed in spreading awareness about importance of the Constitution. Constitution Day, also known as National Law Day, is celebrated in India, on No-

vember 26 every year to commemorate the adoption of the Constitution of India. The preamble of the constitution was read in virtually by students to signify its importance.

Little multitaskers of class V, presented informative videos



where they highlighted the significance of the day. Ryanites also accentuated the provisions related to the powers and duties of the government that helps in maintaining law and order in the country.

School head Shivali Sharma appreciated the efforts of Ryanites to create awareness about Constitution Day of India.

## Memory and Communication Workshop

Boost your child's short-term memory and empower them to become amazing impromptu public speaker.

An eminent participation certificate to all our little champions.



Book Now for Free!

# MESSI WINS SEVENTH BALLON D'OR

Spain and Barcelona player Putellas crowned women's winner; Lewandowski, Pedri among other winners

**L**ionel Messi won the men's Ballon d'Or for a record-extending seventh time, ending the year in style after a brilliant final season with Barcelona and earning his first major international trophy with Argentina. Alexia Putellas became the third winner of the women's award for an outstanding season with Barcelona and Spain.

## MESSI OVERJOYED

Now 34, Messi pipped much-fancied rivals like Robert Lewandowski and Karim Benzema to take the award in a glittering ceremony in Paris, the city he now calls home after leaving boyhood club Barcelona for Paris Saint-Germain in August. Despite his tearful goodbye from Barcelona and his relatively underwhelming start to life in France, the jury of journalists from around the world rewarded him in particular for captaining Argentina to their first major international title since 1993.

"Two years ago I thought I was coming into my final years but here I am again back here," said Messi, who won the last edition of the Ballon d'Or in 2019 before last year's awards were cancelled due to the pandemic. Messi also won in 2009, 2010, 2011, 2012 and in 2015.

"People were starting to ask me when I was going to retire but now I am here in Paris and I am very happy," he said at the Chatelet Theatre in central Paris, where he was joined by his wife Antonella Rocuzzo and their three children.

"What I achieved with Argentina was a dream come true. I think I won this trophy thanks to what we did at the Copa America, so I dedicate it to



Alexia Putellas



Pedri Gonzalez



Gianluigi Donnarumma

my teammates."

Argentina beat Brazil 1-0 in the final in Rio de Janeiro as Messi won a major title with his country for the first time. He also scored 38 goals in 48 games in his final season with Barcelona and won the Copa del Rey.

However Messi has played just 11 times and scored four goals for PSG since joining the French club and there was a feeling that this year might see a different winner.

## LEWANDOWSKI BEST SCORER

Poland striker Lewandowski would have been a shoe-in in 2020, when he scored 45 goals in 37 games for Bayern, only for the awards to be cancelled. He ended last season with a remarkable 41 Bundesliga goals but had to settle for second place in the voting for the Ballon d'Or, which is organised by France Football magazine and voted for by a panel of journalists from around the world. Lewandowski instead was given a consolation prize for the year's best goal-scorer and received glowing praise from Messi. "I wanted to say to Robert that it was an honour to go up against him. He deserved to win it last year," Messi said.

Midfielder Jorginho, who won the Champions League with Chelsea and Euro 2020 with Italy, came third, followed by Real Madrid's Karim Benzema and Chelsea player N'Golo Kante. Five-time winner Cristiano Ronaldo came sixth. He was absent from the ceremony. Between them, Messi and Ronaldo have won 12 of the last 13 editions of the Ballon d'Or with the exception coming in 2018 when Luka Modric claimed the prize.

## THIRD WOMEN'S EDITION

This is just the third year that a women's Ballon d'Or has been awarded, with Putellas following in the footsteps of Norway's Ada Hegerberg, winner in 2018, and the United States' 2019 World Cup superstar Megan Rapinoe.

Spain international Putellas, 27, captained Barcelona to victory in this year's Champions League, scoring a penalty in the final as her side hammered Chelsea 4-0. She also won a Spanish league and cup double with Barca, the club she joined as a teenager in 2012 and who are fast becoming the dominant force in the women's game.

"I'm very emotional, it's a very special moment," she said at the Paris ceremony through a translator. "I would like to start by thanking all my teammates, especially my current (Barcelona) teammates. For me it's a collective success."

In other awards, the Kopa Trophy for the best under 21 player went to 19-year-old Spain and Barcelona midfielder Pedri. He caught the eye at Euro 2020 and reached the Olympic final.

The Lev Yashin for best goalkeeper was won by Gianluigi Donnarumma, who helped Italy win the Euros. AGENCIES

I don't know how many more years I have left but I hope there will be many because I am really enjoying myself this year. Although I always put the collective forward, I cannot hide my joy at having been able to win another Ballon d'Or. I want to thank you and dedicate to all my colleagues and @afaseleccion staff for the beautiful year we have lived through. Also those I had at @fcbBarcelona and those at @psg MESSI



Photo: GETTY IMAGES

## SINDHU LEADS INDIA'S CAMPAIGN

Focus will be on Lakshya, Satwik-Chirag as best Indian team start World Tour Finals

**P**V Sindhu will look to ensure that her consistent run yields a title, while all eyes will also be on the fast-rising Lakshya Sen and the men's doubles pairing of Satwiksairaj Rankireddy and Chirag Shetty as they make their debut at the BWF World Tour Finals beginning in Bali on Wednesday.

It will be the best ever representation for India at the year-end tournament with as many as seven of them qualifying for the USD 1,50,000 event.

Save for mixed doubles, the Indians compete in all other categories with Ashwini Ponnappa and N Sikki Reddy, who made the cut after the completion of the Indonesia Open last week, set to represent the country in the women's doubles event.

### In fine form

The only Indian to win the prestigious title in 2018, reigning world champion Sindhu was a finalist at the event the year before and she will look for another good outing when she opens her campaign against top seed Pornpawee Chochuwong of Thailand in group A.

Sindhu, a two-time Olympic medalist, has been consistent with three semifinal finishes in the last three events and is likely to make it to the knockout stage. The 26-year-old from Hyderabad is expected to finish among the top two in the group as she has a good record against the other two opponents -- Denmark's Line Christensen and Germany's Yvonne Li.

Srikanth, only the fourth player ever to win four Super Series titles in a year, has looked in good touch in the last few events with semifinal finishes at Indonesia Masters and Hylo Open. The former world No.1 had reached the knockout stage of the year-ending event in 2014 and he will look to relive those moments when he begins his campaign against Malaysia's second seed Lee Zii Jia in group B, which also comprises France's Toma Junior Popov and Kunlavut Vitidsarn of Thailand.

### Tough grouping

Debutants Lakshya and Satwik-Chirag have been clubbed in the 'group of death' and it will be ex-



Lakshya Sen

tremely tough for them to qualify for the next stage.

Lakshya, who had won five titles in 2019, has been clubbed in Group A with top seed and Olympic champion Viktor Axelsen, two-time world champion Ken-ichi Momota of Japan and Denmark's Rasmus Gemke.

The 20-year-old from Almora, who had reached the finals of the Dutch Open and achieved semifinal results at the Denmark Masters and Hylo Open, will open against Rasmus.

World No.11 Satwik and Chirag will face top seeded Indonesians Marcus Fernaldi Gideon and Kevin Sanjaya Sukamuljo, world No.3 Chinese Taipei's Lee Yang and Wang Chi-Lin and world No.10 Denmark's Kim Astrup and Anders Skaarup Rasmussen in group A.

In women's doubles, Ashwini and Sikki will have to compete with Japan's second seeds Nami Matsuyama and Chiharu Shida, Bulgaria's Gabriela Stoeva and Stefani Stoeva, and Chloe Birch and Lauren Smith of England for a place in the knockout stage. AP

## CROATIA BEAT ITALY TO MAKE DAVIS CUP SEMIS

**C**roatia became the first team to reach the Davis Cup semifinals after seeing off Italy 2-1.

With the singles squared, the top-ranked doubles team of Mate Pavic and Nikola Mektic had no trouble seeing off Fabio Fognini and Jannik Sinner 6-3, 6-4 in the decider. Sinner replaced Simone Bolelli after winning his singles, which took nearly three hours. But he and Fognini couldn't get a break point against Pavic and Mektic, winners of Wimbledon and the Olympics this year.

Croatia, a two-time champion, awaits Serbia or Kazakhstan. Their quarterfinal is on Wednesday in Madrid. Borna Gojo set up Croatia's win by surprisingly taking the

opening singles against Lorenzo Sonego 7-6 (2), 2-6, 6-2. Gojo, who is 252 places below the 27th-ranked Sonego, turned around a 4-1 deficit in the opening set to force the tiebreak. Sonego rallied in the second set but continued to make errors in the third, including wasting three break points in the seventh game. "I knew third set it was either one's game - one set, anything can happen," Gojo said. "It was a really tough game at 4-2 and I managed to hold. So, yeah, I'm really happy."



Mate Pavic



Nikola Mektic

Sinner evened the score when he beat former US Open champion Marin Cilic.

In the other quarterfinals Russia play against Sweden in Madrid on Thursday. AP

## QUIZ TIME!

**Q1:** In tennis, how many point(s) does "love" mean?

a. 5 b. 15 c. 0 d. 10

**Q2:** Which among the following is not a correctly matched pair? (Countries - National Game)

a. USA - Baseball  
b. Pakistan - Field Hockey  
c. China - Table Tennis  
d. All are correct

**Q3:** Who won the first Hockey World Cup?

a. Belgium b. France  
c. UK d. Pakistan

**Q4:** Who among the following is the first batsman to hit six sixes in an over?

a. Garfield Sobers  
b. Ravi Shastri  
c. Ted Altetson  
d. Kapil Dev

**Q5:** Who was the winner in Javelin Throw in the 2021 Diamond League event for men?

a. Andreas Hofmann  
b. Jakub Vadlejch  
c. Johannes Vetter  
d. Tomas Walsh

**Q6:** Ramkumar Ramanathan won his maiden Challenger level singles title ATP80 Manama

Ramkumar Ramanathan



Photo: GETTYIMAGES

event at Bahrain recently. Whom did he outplay in the summit clash?

a. Jay Clarke b. Evgeny Karlovskiy  
c. Alexandar Lazarov d. Yanki Erel

**Q7:** Which among the following cricketers has not won the "Rajiv Gandhi Khel Ratna" award?

a. Sachin Tendulkar  
b. Kapil Dev  
c. Virat Kohli  
d. M S Dhoni

**Q8:** Who was the first male player to complete the Career Grand Slam on three different surfaces?

a. Andre Agassi  
b. Roy Emerson

c. Jim Courier  
d. Rafael Nadal

**Q9:** Who was the first Indian to become the junior Wimbledon Champion?

a. Premjit Lal  
b. Vijay Amritraj  
c. Ramanathan Krishnan  
d. Leander Paes

**ANSWERS:** 1. c. 0  
2. d. All are correct  
3. a. Belgium  
4. a. Garfield Sobers  
5. c. Johannes Vetter  
6. b. Evgeny Karlovskiy  
7. b. Kapil Dev  
8. a. Andre Agassi  
9. c. Ramanathan Krishnan