



संस्कृति मंत्रालय
भारत सरकार
Ministry of Culture
Government of India



नेहरु विज्ञान केन्द्र
राष्ट्रीय विज्ञान संग्रहालय परिषद की इकाई
संस्कृति मंत्रालय, भारत सरकार
Nehru Science Centre
A Unit of National Council of Science Museums
Ministry of Culture, Government of India



MEMBER NEWS

SCI-MAIL

OCTOBER TO DECEMBER 2024 VOL.27 NO.4

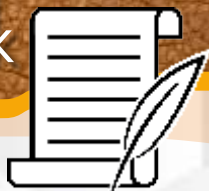
Nehru Science Centre

(A Unit of National Council of Museums, Ministry of Culture, Govt. of India)

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Director's Desk



Dear Science Enthusiastic,
In this volume of SCIMAIL, we are paying tribute to the people's president Dr. A P J Abdul Kalam – the missile man and 11th President of India. We at Nehru Science Centre were fortunate enough to host Dr Abdul Kalam twice in our auditorium. He interacted with students who thronged the auditorium much more than its capacity. We will commemorate Aviation Day also which is to celebrate the JRD's First flight between Karachi and Mumbai on 15th October 1932. What a coincidence that Dr Kalam's birthday also falls on the same day! This edition of SCIMAIL contains lot of information to pay the tribute to Dr APJ Abdul Kalam which is Dr Avul Pakir Jainulabdeen Abdul Kalam. I am one of the science communicator who attended both his interactions at Nehru Science Centre Mumbai once during National Science Day and again during inauguration of National Science Seminar 2009. What an inspiring life - Simple Living High Thinking.

We have now launched a series titled Science in Seconds. Do watch it on our social media platforms and follow them too. It can make your visit much more fruitful. Also we have installed new telephone lines for our visitors' conveniences and advance planning. Kindly note our new telephone numbers to contact information counter and education section for programmes, facilities and other information.

We have launched another new opportunity for students to explore the world of innovative experiments. Nehru Science Centre and Marathi Vigyan Parishad has launched a new initiative in which students will do some exercises in innovative thinking by performing any three well designed science experiments under the supervision of experts. Any students or even schools can book the slots by paying nominal fee. For details please contact education section immediately. The event was launched by stalwarts of Indian science fraternity Like Dr M M Sharma, Dr Anil Kakodkar, and Dr J B Joshi who have been awarded Padam vibhushan and Padam Bhushan – the highest civilian awards of the country for outstanding contributions in the field of science and technology.

Science ke Funday introduced again now after lockdown got very good response from families and were booked once announced. The feedback has been good so far. It is an opportunity for the family to enjoy and experience science through hands-on activities. Annual Interschool science quiz got participation by over 150 schools in middle and high school categories each. The Xperia Science Fair at Experia mall was also quite successful outreach event. The maiden National Science Week was commemorated with full flavour.

Gear up to participate in our events upcoming in the next quarter. Don't miss them. Watch the relevant column in this magazine and stay tuned with Nehru Science Centre Mumbai to win fabulous prizes! Keep loving science and science centre.

Umesh Kumar Rustagi
Director
Nehru Science Centre, Mumbai

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The Cover page & this edition - Designed by
H. D. Barapatre, Exhibition Officer 'C'



Scientific Sculpture of Dr. A.P.J. Abdul Kalam

Step into the world of wonders of science at the Nehru Science Centre in Mumbai, where a captivating scientific sculpture pays tribute to the visionary Dr. A. P. J. Abdul Kalam.

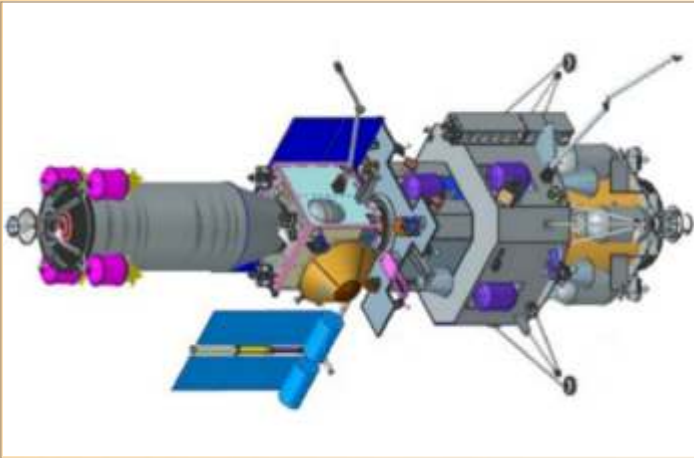


This masterpiece is not just a static figure; it's a mesmerizing optical illusion in the form of art.

As you approach, Dr. Kalam's face appears to follow your every move, a testament to the power of perspective. Despite its stillness, your brain interprets it as if it's in motion, creating a magnetic attraction that draws you in. Walk beside it, you'll feel the gaze of this remarkable figure following you, leaving you in awe of the captivating fusion of science and art. An unforgettable experience awaits you at the Science Centre.

WHAT'S NEW?

Chandrayaan-4 mission to demonstrate technologies for safe return from Moon.



The union cabinet gave its approval to Chandrayaan-4, which will demonstrate the technologies for a successful return to Earth after collecting samples from the Moon. Chandrayaan-4 mission will act as the technology base for the eventual landing of an Indian on the Moon and safe return to Earth. Government has indicated Rs 2,104.96 crore spending on the 'Chandrayaan-4' technology demonstration mission.

India has already demonstrated the capability for a soft landing on the Lunar surface with the Chandrayaan-3 Lander and has acquired the required technology base for repeat missions. Landing safely on the moon and returning to earth after collecting samples from Moon is the next stage in technology development for successful missions in future.

Indian Space Research Organisation (ISRO) has been tasked with the entire projects, including development of the spacecraft and the launch vehicle as well as the final launch and tracking and control operations.

The mission will also make India self-sufficient in critical space technologies enabling it to undertake manned missions and exploration studies.

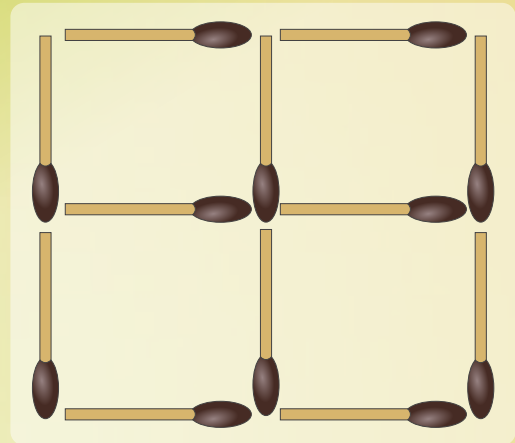
India also announced three more planned space missions, including one to planet Venus, Building an Indian Space Station and finally Taking an Indian to and from the Moon – all to be achieved by 2040.

Source: https://www.domainb.com/industry/industry-general/chandrayaan-4-mission-to-demonstrate-technologies-for-safe-return-from-moon#google_vignette

MATHS PUZZLE



1 Move any two matches to form seven squares.



2 Complete the box by filling in the missing number.



Last date for Sending Answers 15th November 2024
Best entry will be suitably awarded

Note : The contest is open to students up to std. X only

Send your answers to
librarian.nscm@gmail.com

CONGRATULATIONS!!

Congratulations to all the winners of our Math Puzzle contest featured in Sci-Mail Vol 27 No. 3. We received an overwhelming response from hundreds of brilliant students and we are thrilled to announce the top three winners who impressed us by submitting the correct answers within the first week of publication.

- **Manali Sarjerao Jadhav**, 6th Std. Central Primary School, Sonurle, Shahuwadi, Kolhapur.
- **Ahana Singhvi**, 6th Std. Saint Pauls School Mala Road, Kota, Rajasthan.
- **Janki Patel**, 7th Std. CNM School, Vile Parle west, Mumbai.



Tippu Sultan, the ruler of Mysore in the late 18th century, is credited with pioneering the use of iron-cased rockets in warfare, marking a significant contribution to modern military technology. Known as Tippu's rockets, these weapons were among the first to incorporate iron and steel for greater range and effectiveness on the battlefield. While the invention of rocketry is generally attributed to the Chinese during the Sunga Dynasty (960 to 1279 AD), Tippu's innovations are a unique and impactful development in military history.

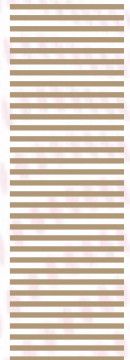
According to ancient Vedic hymns, rockets were classified as "agni sastra" or "weapons of fire." Though there are claims of an Indian origin for rocketry, no conclusive evidence has been found in ancient Sanskrit literature. What is firmly established, however, is that Tippu Sultan's Mysore Kingdom applied scientific principles to develop and perfect these rockets, marking the first recorded instance of systematic experimentation with missile technology in India.



An artistic impression of the battle of Srirangapatna between Tipu Sultan and the British Army

Tippu's Rockets

Tippu's rockets were constructed from iron and steel cylinders, which formed the rocket casing. This design allowed the rockets to generate greater pressure and thrust, achieving a 1.5 to 2 kilometers range. The warheads, typically swords, were propelled by packed gunpowder inside the cylinder. These rockets weighed between 2.2 kg to 5.5 kg, making them light enough for efficient use in battle.



Tippu Sultan organized his rocket troops into 27 brigades, or Kushoons, which can be considered the first modern rocket brigade. He used these rockets extensively, particularly during the battles of Srirangapatna in 1792 and 1799 against the British. After the 1799 war, the British captured over 700 rockets and components of another 900 rockets, which were sent to England for study. Some of these rockets are still preserved in the Artillery Museum at Woolwich in London. In summary, Tippu Sultan's rockets were ahead of their time, showcasing India's metallurgical advancements and leaving an indelible mark on both Indian and global military history.

INDIAN SCIENTIST

Dr. A.P.J. Abdul Kalam (1931 - 2015)

Avul Pakir Jainulabdeen Abdul Kalam, born on 15 October 1931 in Rameswaram, Tamil Nadu, came from humble background. His family, once prosperous, had fallen into poverty by the time Kalam was a child. His father, a boat owner and imam, ferried Hindu pilgrims, while young Kalam sold newspapers to contribute to the family income.

Despite having average grades in school, Kalam had a passion for learning, particularly in mathematics. He pursued physics at Saint Joseph's College in Tiruchirappalli and later studied aerospace engineering at the Madras Institute of Technology. Though he aspired to be a fighter pilot, he narrowly missed selection.

Kalam began his career in 1960 at the Defence Research and Development Organisation (DRDO) and later joined the Indian Space Research Organisation (ISRO). At ISRO, he led the development of India's first Satellite Launch Vehicle (SLV-III), a significant achievement in the nation's space program. His work on missile technology, including the Agni and Prithvi missiles, established him as a key figure in India's defense advancements. He also played a pivotal role in the 1998 Pokhran-II nuclear tests, solidifying India's position as a nuclear power.



In 2002, Kalam was elected as India's 11th President, earning the title "People's President" for his humble nature and connection with the common citizen.

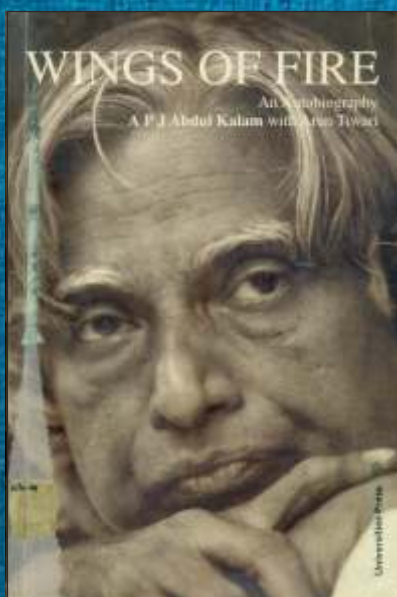
He passed away on 27 July 2015 while delivering a lecture in Shillong, leaving behind a lasting legacy in science, education, and public service.

Dr. Kalam's life story continues to inspire millions, reminding us that with hard work, perseverance, and a vision for the future, one can overcome any obstacle and make a meaningful impact on the world.

We fondly remember his visit to Nehru Science Centre, Mumbai, on 26th September 2009, where his words touched our hearts and encouraged students to dream big. His unwavering dedication to inspiring young minds and promoting scientific curiosity remains unmatched.

BOOK WORTH READING IN LIBRARY

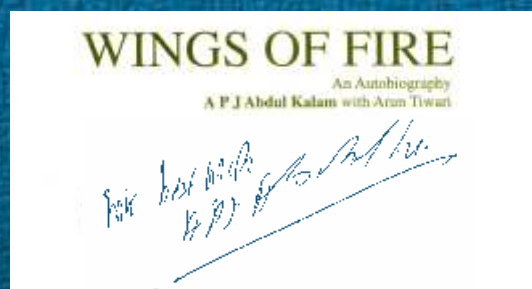
WINGS OF FIRE – An Autobiography of Dr. A.P.J. Abdul Kalam



"Wings of Fire" is the inspiring life story of Dr. A.P.J. Abdul Kalam, one of India's greatest scientists and former President. In this autobiography, Dr. Kalam takes us through his remarkable journey from a humble childhood in Rameswaram, Tamil Nadu, to becoming India's "Missile Man" and its 11th President.

This book is especially important for school children because of its powerful message about hard work, perseverance, and the ability to dream big. Dr. Kalam's life teaches us that we can achieve incredible things no matter where we come from, with determination and passion. His journey also highlights valuable lessons about teamwork, humility, and learning from our mistakes.

Written in simple language, the book is filled with motivational thoughts and is easy for young readers to understand. It encourages students to set high goals and work diligently to achieve them. "Wings of Fire" is a must-read for anyone looking for inspiration and guidance on how to turn dreams into reality.



At the Nehru Science Centre Library, we are fortunate to have a copy of this book signed by Dr. Kalam himself, adding to its significance and inspiration!



Perpetual Dancers

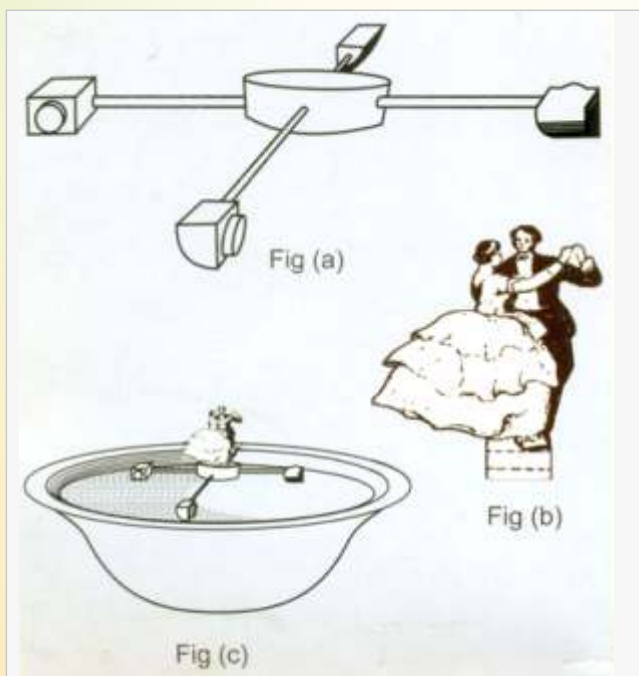
A Creative Science Experiment

You will need:

- 4 needles
- 3cm x 3cm cork
- Knife
- Camphor
- Glue
- Tray
- Water

Procedure:

1. Carefully cut the cork into two discs.
2. Divide one cork disc into four equal parts.
3. Insert the 4 needles into the remaining cork disc.
4. Attach a piece of camphor to each small cork piece using glue, positioning them evenly around the needles as shown in Figure (a).
5. Draw dancers on a piece of card paper, ensuring each has an extra tab as shown in Figure (b).
6. Glue the tabs onto the top of the central cork disc, allowing the dancers to stand on the cork surface.
7. Place the device gently on the water's surface in a bowl, as illustrated in Figure (c).



Observation:

The device will start spinning spontaneously on the water's surface.

What happens:

When camphor dissolves in water, it reduces the water's surface tension. Surrounding water with higher surface tension then pushes the camphor. This force propels the device to rotate continuously, creating a mesmerizing spinning motion.

This experiment not only demonstrates the effect of surface tension on floating objects but also showcases the playful interaction of science and creativity.

UPCOMING PROGRAMMES

World space week

October 4-10, 2024

Experimental skill test

October 13, November 17 and December 15, 2024

Science Ke Funday

October 20, 2024

National Unity day

October 31, 2024

International Science Centre and Science Museum Day

November 10, 2024

NSC Anniversary Day

November 11, 2024

Children's day

14th November 2024

Zonal Level Science Drama Festival

November 28, 2024

Aviation Day

December 9, 2024

National Mathematics Day

December 22, 2024



For Details please contact -
edu.nscm@gmail.com

TREE TREASURE AT NSC

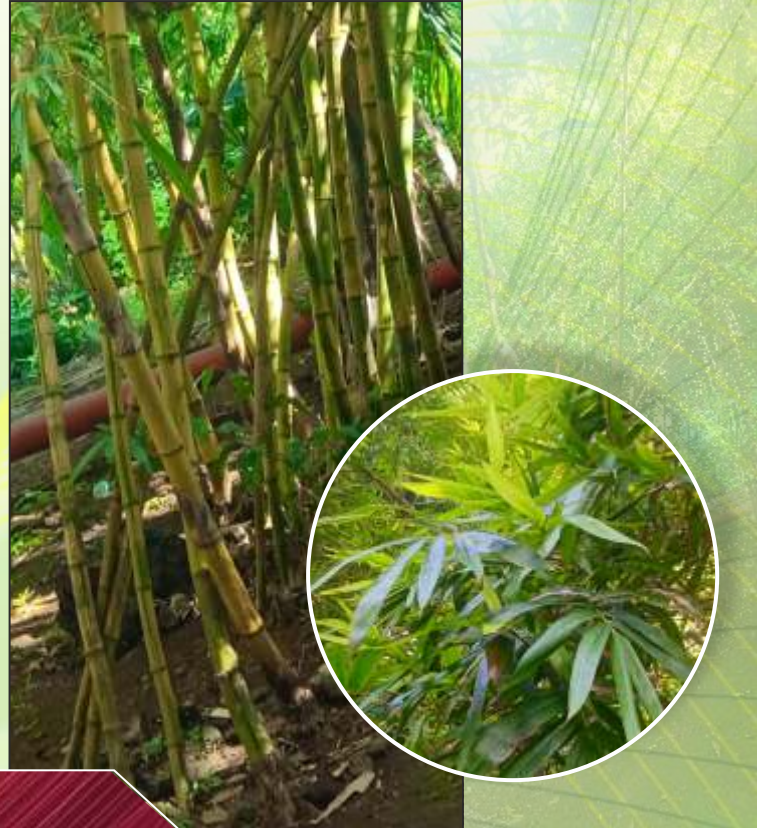
Bamboo Tree

Botanical Name: **Bambusa vulgaris**

Family: **Poaceae**

The *Bambusa vulgaris*, commonly known as the bamboo tree, is a fast-growing plant that thrives in various environments. Found predominantly along riverbanks, roadsides, and wastelands, this species adapts well to low altitudes but can survive up to 1,500 meters above sea level. It is particularly valued for its ability to control erosion and grow in unfavourable conditions like drought or low temperatures, tolerating frost as low as 3°C.

Though *Bambusa vulgaris* prefers moist, humid environments, it remains adaptable to a wide range of soils. Its versatility makes it an ideal plant for ornamental use, often being used as border hedges or fencing. The plant's stems, known as culms, are utilized for various purposes, including construction, flooring, and roof tiles. Bamboo is a staple in handicrafts, furniture-making, basketry, and even tool-making.



How do drones work?

Drones, or unmanned aerial vehicles (UAVs), operate using aerodynamics, electronic

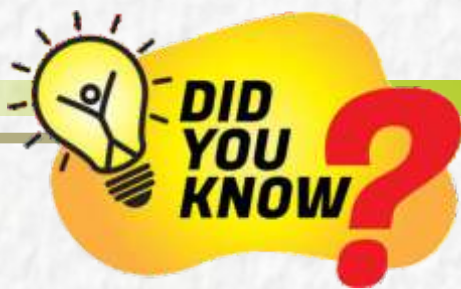
controls, and wireless communication. Most commonly, they feature a quadcopter design with four rotors that provide lift and stability. By adjusting the speed of the rotors, drones can ascend, descend, or move in different directions. A flight controller, acting as the drone's brain, processes inputs from sensors like gyroscopes, accelerometers and GPS to maintain balance and execute complex maneuvers.

Drones are remotely controlled via radio signals from a transmitter or, in some cases, autonomously using GPS. Power comes from a rechargeable lithium-polymer (LiPo) battery, which typically lasts 10 to 30 minutes in consumer drones.

In agriculture, drones are used for efficient spraying of fertilizers and pesticides, following GPS-guided flight paths to ensure even coverage, reducing chemical use and labour costs. They also assist in field mapping and planning, creating high-resolution maps for irrigation management and planting strategies.

Drones combine advanced technology to perform various tasks, enhancing productivity and sustainability in sectors like agriculture by enabling precise monitoring and data-driven decision-making.



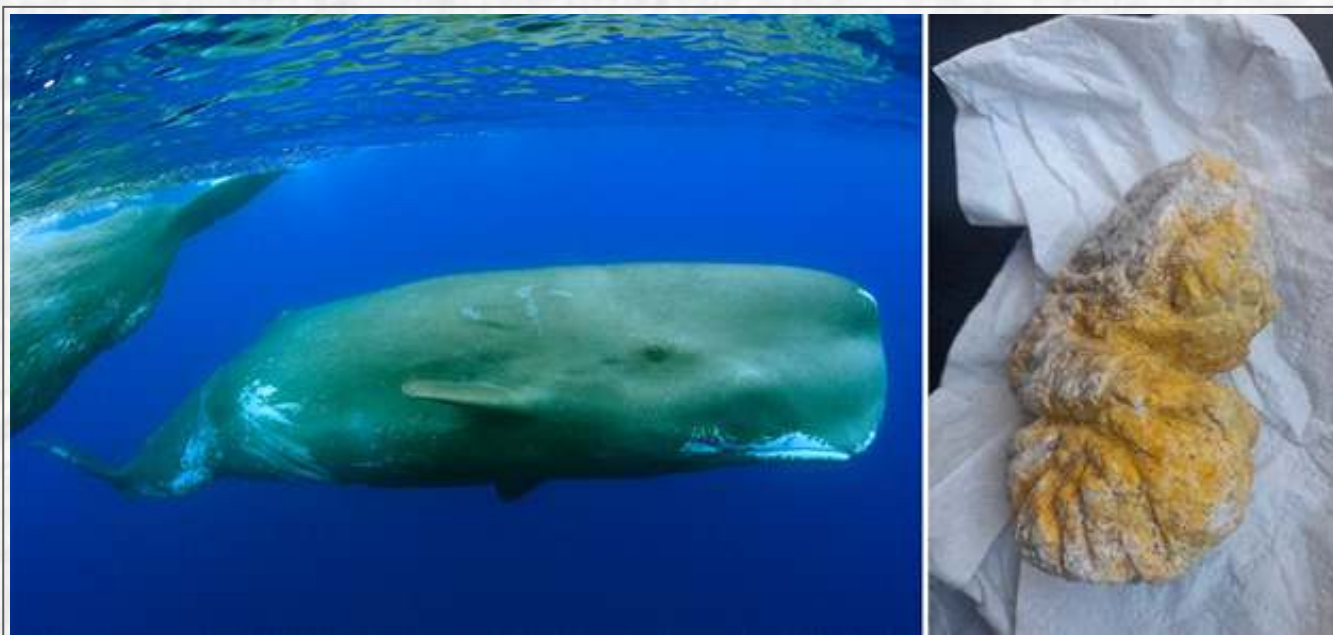


Exploring the Chemistry of Whale Vomit

Ambergris, also known as whale vomit, is a waxy substance produced in the digestive system of sperm whales to protect their intestines from indigestible materials, like squid beaks. This secretion, known as clutch, is often expelled through vomiting. Ambergris has been prized for centuries due to its unique fragrance and chemical composition. Lucky finders of whale vomit have made millions of pounds. A fortunate Thai fisherman, who usually earns 500 pounds a month, found 100 kilograms of ambergris in 2020 in possibly the world's largest whale vomit find - worth 2.4 million British pounds.

Ambergris is composed primarily of Ambrein, a triterpene alcohol that oxidizes over time to form Ambroxide (or ambrox), which gives ambergris its distinctive musky scent. Other key components include Ambrinol, which adds earthy and woody notes, cholesterol, and various fatty acids and bile acids. These compounds contribute to ambergris's unique fragrance and texture, making it a prized ingredient in the perfume industry.

The study of ambergris continues to intrigue scientists, with ongoing research focused on uncovering its medicinal properties and creating synthetic alternatives for various industrial applications.



Exploring the Chemistry of Deodorants and Smelly Armpits

When we sweat, our bodies release moisture through sweat glands, particularly in areas like our armpits, to cool down. Sweat itself is a mix of water, salts, proteins, and lipids. The characteristic body odor, however, isn't caused by sweat directly but by bacteria on our skin breaking down these compounds. One of the main culprits in underarm odor is a compound called (E)-3-methyl-2-hexenoic acid, an aliphatic acid.

To manage body odor, people commonly use deodorants and antiperspirants. Deodorants work by neutralizing odor-causing bacteria, while antiperspirants reduce sweating by blocking sweat glands. Though both are effective, they operate differently.

Recent studies suggest that deodorants and antiperspirants can change the composition of our underarm microbiome, potentially impacting our health. This has led scientists to explore alternative methods to control body odor that don't disrupt the microbiome. Understanding the chemistry of sweat and how these products work is key to developing safer, more effective solutions.



IN THE LAST QUARTER

July 2024

Teachers' Training Programme

A five-day teachers' training program held from July 1-5, 2024, provided 16 trainee teachers from Clara's College of Education with practical experience in using educational kits for interactive teaching. The program covered key scientific concepts like the Value of Pi (π), the Pythagorean Theorem and Archimedes' Principle, aiming to enhance science education with innovative methodologies.



World Population Day Events



To commemorate World Population Day on July 11, 2024, the Centre hosted an online quiz contest. The event saw 168 participants of all ages testing their knowledge on population-related topics.

Experimental Skill Test

On July 21, 2024, the Centre, in collaboration with the Bombay Association for Science Education (BASE), organized an Experimental Skill Test for 15 students from grades 8 to 12. The test aimed to assess students' experimental abilities and observational skills under expert supervision.



Science Ke Funday Workshop

On July 28, 2024, 11 families (44 participants) joined the "Science Ke Funday" workshop, enjoying hands-on experiments, demonstrations, and shows. The event fostered family engagement and sparked enthusiasm for science through interactive and educational activities.



Screening of Films of Planet Earth III series

On July 18, 2024, the Centre, in collaboration with Sony BBC Earth, screened two episodes of the

Planet Earth III series—Coasts and Humans. The event attracted 558 students and teachers.



Vaccine: Injecting Hope Events

Throughout July 2024, the Centre hosted a range of activities under the "Vaccine: Injecting Hope" initiative, including:

- Popular Science Lectures: Four hybrid-mode lectures on topics like vaccine myths, history, and monsoon illnesses, drawing hundreds of participants both online and offline.
- Microbes Workshop (July 3-4): A hands-on session for 17 students on microbiology techniques.
- Street Play 'Ye Hai Jaruri' (July 6): Awareness plays on vaccines performed at various locations, enjoyed by 678 visitors.
- Pocket Microscope Workshop (July 5): 82 teachers learned to build and use pocket microscopes with mobile apps.

Contests

- Painting Contest (July 13): 87 students depicted "Vaccines Are Helpful."
- Slogan Writing (July 15): 63 students crafted slogans on the importance of vaccines.
- Written Quiz (July 16): 59 students tested their knowledge of microbes.
- Street Play Contest (July 18): 48 students performed plays on "Vaccines: Injecting Hope."
- Treasure Hunt (July 19): 54 students participated in a vaccine-themed treasure hunt.



Mobile Science Exhibition

A travelling exhibit on vaccines visited 34 sites in the Pune district, spreading awareness in government schools.



IN THE LAST QUARTER

August 2024

Innovation Hub Sessions

In August 2024, the Innovation Hub conducted three engaging sessions:

- **Tod-Fod-Job (Aug 3):** Participants explored computer hardware by assembling and disassembling components like CPUs and motherboards.
- **Introduction to AI (Aug 10):** A foundational session on artificial intelligence, covering computer languages and basic machine learning principles.
- **DIY Science Experiments (Aug 17):** Attendees performed hands-on experiments, fostering curiosity and practical science learning.



Har Ghar Tiranga Campaign Celebrates 78th Independence Day with Engaging Events

From August 9-15, 2024, the Centre marked India's 78th Independence Day with various activities:

- **Film Screening:** Two films, *Our Flag* and *Flag Freedom*, were shown to 51 students and 61 general visitors.
- **Chalte Chalte Quiz (Aug 11-15):** An on-the-spot quiz on Indian science and technology drew 1,305 participants.
- **Tiranga Exhibition (Aug 14-15):** Showcased the evolution of the national flag, attracting 1,522 visitors.
- **Pledge Ceremony and Singing Contest (Aug 12):** Featured a unity pledge and patriotic performances by 65 participants.
- **Selfie Point:** Set up at the Museum Gate for visitors to support the Har Ghar Tiranga campaign.
- **Online Quiz (Aug 14-15):** Focused on Indian Science & Technology post-independence, with 459 participants.



Xperia Science Fair at Xperia Mall, Dombivli

From August 9-25, 2024, the Xperia Science Fair captivated visitors with:

- **Science Exhibition:** Showcasing 8 displays, attracting 31,077 attendees.
- **Liquid Nitrogen Demonstrations:** 26 shows engaged 13,660 visitors.
- **DIY Make & Take Activities:** 4,052 children participated in hands-on science projects.
- **Science Workshops:** 194 students joined various workshops, with 14 families attending a special family session.



Space Week Commemoration

National Space Week was commemorated with great enthusiasm from 16.08.2024 to 23.08.2024, coinciding with the historic moment when Chandrayaan-3 successfully achieved a soft landing on the Moon's south pole. The week-long celebration included various events aimed at engaging and educating the public about India's space missions.

- **Chandrayaan Missions Exhibition:** Attracted 2,532 visitors with insights into India's Moon missions.
- **Guided Tours:** 54 tours of the Aviation and Space Gallery welcomed 2,556 visitors.

IN THE LAST QUARTER

August 2024

- New Exhibits: “Moon First Step” and “The Crater Copernicus” explored lunar footprints and the Copernicus crater.
- Space Rangoli Contest (Aug 20): 14 participants showcased artistic space-themed Rangolis.
- Online Quiz (Aug 20): “Touching the Moon” quiz engaged 413 participants.
- Painting Contest (Aug 21): 59 students painted visions of moon journeys and future space exploration.
- Water Rocket Demonstrations (Aug 20-23): 1,211 attendees learned about rocket science through 22 shows.
- Satellite Model-Making Workshop (Aug 21): 36 students built satellite models, earning certificates.
- Model Rocketry Workshop (Aug 22-23): 21 students explored rocketry fundamentals and built their own rockets.
- Science on a Sphere Show: 21 sessions on Chandrayaan missions drew 965 participants.
- Popular Science Lecture (Aug 23): Shri Arvind Paranjpye’s lecture on India’s space program was attended by 287 students and teachers, with 4,403 virtual views.



Inauguration of New Activity 'Exercise in Innovative Thinking'

On August 21, 2024, the Centre, in collaboration with Marathi Vidnyan Parishad, Mumbai, launched the 'Exercise in Innovative Thinking' program at Nehru Science Centre. The inauguration featured Padma Vibhushan Prof. M. M. Sharma and Dr. Anil Kakodkar, and Padma Bhushan Prof. J. B. Joshi. The first batch of 12 students began exploring physics experiments, with additional sessions scheduled for August 28 and 1, 2024.



Mobile Science Exhibitions:

- Health and Sanitation Exhibition: Covered 21 schools in Solapur district over 28 days.
- Curriculum-Based Exhibition: Visited 18 schools in Wardha district within 28 days.



STEM workshop for students

On August 29, 2024, a STEM workshop will offer 55 students hands-on activities in Physics and Chemistry, along with a tour of the Centre's facilities.

Experimental Skill Test: On August 18, 2024, the Centre and BASE conducted an Experimental Skill Test with 5 registered participants, assessing their practical skills and observational abilities under expert supervision.



IN THE LAST QUARTER

September 2024

Regional Science Seminar, Mumbai Region

The Dy. Director of Education, Mumbai, in collaboration with Nehru Science Centre, organized the Regional Level Science Seminar on 2nd September 2024. The seminar focused on the theme "Artificial Intelligence: Potentials & Concerns," fostering discussions on the opportunities and challenges of AI.



Teachers' Day Celebration

In honour of Teachers' Day, the Centre organized special "No Cost Low-Cost Experiments" and Liquid Nitrogen demonstrations for Bombay Teachers' Training College.



Inspirational stories of Dr. Radha Krishna and Savitri Bai Phule were shared by teachers. The session was attended by 230 trainee teachers.

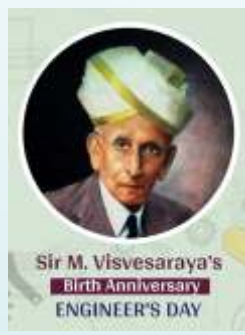
Tree Plantation Activity

Shri Arnab Chatterjee, Director I/c, along with 64 Officers, Staff Members, and 52 school students, participated in a Tree Plantation Activity, planting 25 saplings in the Science Park.



Engineers Day

In honour of Bharat Ratna Shri M. Visvesvaraya, the Centre hosted an online quiz, with 58 participants engaging in questions on engineering topics and his life achievements. All participants received digital certificates.



World Bamboo Day

The Centre organized a Bamboo Exhibition, curated by veteran artist Shri Ramesh Date. He highlighted bamboo's historical and modern relevance in art, culture, and sustainability.

The event drew 648 visitors and advocated for training programs to foster bamboo craftsmanship and innovation among young artists.



Popular Science Lecture on Green Chemistry

The Centre hosted a lecture on "Green Chemistry for a Sustainable Future" by Dr. Krishna Sharma from the University of York, UK. Over 300 students from Mumbai attended, learning about eco-friendly innovations and the role of green chemistry in sustainability.



International Symposium on Metalions 2024 on 21.09.2024 and 22.09.2024

In collaboration with IADMFRR, the Asian Academy for Oral and Maxillo-Facial Radiology, and the Society for Cancer Research and Communication, VELMENI, the Centre hosted the 19th International Symposium on Metalions. The event attracted 85 national and international delegates, with 679 total attendees, including school children. Research presentations and papers were showcased, and all participants received certificates.



IN THE LAST QUARTER

September 2024

Annual Inter-School Science Quiz 2023

The Centre, in collaboration with the Rotary Club of Bombay Pier and the Rotary Club of Bombay Queen City, launched the Annual Inter-School Quiz Competition, with approximately 140 schools from Mumbai and its suburbs registered. The inaugural day featured the first written elimination round, with a total of 652 students participating in teams from both Junior (5th to 7th grade) and High School (8th to 10th grade) divisions.



Science in Seconds

To commemorate the International Day of Scientific Culture, the Centre launched a new video series titled "Science in Seconds." The series features quick, engaging episodes showcasing captivating exhibits. So far, two episodes have been released on social media, collectively garnering 369 views on Facebook:

Episode 1: Body Transport Network - Overview of blood circulation and the concept of double circulation.

Episode 2: Human Heart - Released for World Heart Day, focusing on the heart's functioning and the importance of coronary veins in maintaining heart health.



Regional Level Science Drama

In collaboration with the Dy. Director of Education, Mumbai, the Centre organized a Regional Level Science Drama on the theme "Science and Technology for the Benefit of Mankind." Five schools participated, with teams performing 25-minute acts. Panelists Mrs. Shraddha S. Degonkar and Mrs. Madhuri M. Jog evaluated the performances. The winning team will advance to the Zonal Drama Contest on 28th November 2024. A total of 126 participants and audience members attended the event.



हिंदी पखवाड़ा 2024

केंद्र ने 14 से 30 सितंबर 2024 तक हिंदी पखवाड़ा मनाने के लिए कई कार्यक्रमों का आयोजन किया। इसमें विज्ञान आधारित फिल्म, सामान्य विज्ञान प्रश्नोत्तरी, ऑनलाइन प्रश्नोत्तरी, राजभाषा प्रतिज्ञा, प्रश्नोत्तरी प्रतियोगिता, हिंदी कार्यशाला, अनुवाद प्रतियोगिता, श्रुतलेखन प्रतियोगिता, निबंध प्रतियोगिता, हास्य कार्यक्रम, और प्रोफेसर विजय सिंह द्वारा व्याख्यान शामिल थे। अंतिम दिन 30.09.2024 को हिंदी गीत गायन प्रतियोगिता के साथ कार्यक्रम का समापन हुआ। सभी गतिविधियों में विद्यार्थियों, अधिकारियों और कर्मचारियों ने उत्साहपूर्वक भाग लिया, जिससे हिंदी और विज्ञान के प्रति जागरूकता बढ़ी।



NSC - A Wonderland of Science

Science Park: Full of interactive exhibits on principles of energy, mechanics, perception & relics from the past: railway engines, tram cars, aircraft, electric power generator in park spread over 8 acres in green environment with over 200 species of plants and picnic area for school groups.



Permanent Exhibitions: The main building houses galleries full of exciting, interactive & interesting exhibits on topic relevant to school curriculum and for general public to make them appreciate Science with fun.



- Reception • Science for Children • Sound & Hearing
- Mirror Gallery • Machined to Think • Evolution
- Human and Machine • Our Technology Heritage
- Prehistoric Life • Hall of Nuclear Power
- Hall of Aviation & Space

Regular Programmes / Activities

SCIENCE ODYSSEY



The Science Odyssey facility with 18m dia Spherical Dome & fish eye lens projection system set up at the Centre, is the first of its kind in this region. It provides an opportunity to learn science in an immersive ambience. special shows can be arranged on request.

Now Showing "Australia's Great Wild North" Check our website for updates: <https://nehrucentre.gov.in/>



High Voltage Demonstration

Nehru Science Centre, Mumbai has set up the first of its kind High Voltage Demonstration facility titled '**Sparkling High Voltage Demonstration**' which is now opened for the visitors.

This new facility offers some impressive demonstrations with a 200kV AC transformer, spectacular display of sparks & sounds with a Large TESLA Coil producing up to 1.50 million-volts and many more supporting equipments like Lichtenberg Tree Formation set-up, Jacob's Ladder, Arcing Horns, etc. wherein visitors can see disruptive discharges through air, sliding discharges over a glass plate, the demonstration with Faraday's cage, artificially generated lightning, etc.

Science on a Sphere

The state-of-the-art educational visualisation tool patented by the National Oceanic and Atmospheric Administration (NOAA), USA, is the first of its own kind in the western



part of India. The **Science On a Sphere** provides real time atmospheric and climatic data that is projected on the 1.8 metre Spherical globe. The giant animated sphere appears to be floating in mid-air, and even rotating on its axis. You can see oceans & continents in their actual colours (just as our planet appears from outer space), Tropical rain forests, Currents of the oceans in motion, Moon, Jupiter and Mars. This amazing, cutting-edge technology, the SOS, was invented by NOAA to educate the audience on earth and space systems in a three-dimensional format. This technology is now available worldwide for science centres, museums, educational institutes etc.

3D Science Show

The visitors to the 3D Science Show will experience an out of the world immersive experience in which the near realistic visuals will appear to come out from the static screen right in front of their eyes. The shows would be conducted every hour at the Centre for the general public & school groups.

Science Show

Exciting science demonstrations on Air, Sound, Chemistry is Fun and Fun with Physics etc. are organized regularly at the Centre thrice a day.

Sky Observation Programme

Every Saturday & Sunday after Sunset
(Weather permitting)

Motion Simulator

Motion Simulator is a machine designed to provide a realistic imitation of the controls and operation of a vehicle, aircraft, or other complex systems, mainly used for training purposes. It creates the effect of being in same conditions like driving on a rough road, moving in space etc.

It gives visitors thrilling experience through 3D viewing on a 70" LED monitor. Presently it is screening the film "The Great Wall of China". Here you are guided by a crazy old man with a rocket-powered chariot. It's a 10 minutes thrilling bumpy ride! So don't miss.

Book your date for an exciting experience at Nehru Science Centre, Mumbai

You can book online
Entry Ticket to
Nehru Science Centre

<https://nscm.in/general-ticket/>

Follow the Steps:

1. Book your ticket
2. Go to Cart and confirm it is of correct type
3. Go to Checkout and pay using Net Banking, Credit Card, Debit Card or UPI app

**Book
Online**

Timing

**Nehru Science Centre
is open to public every
day
including Sundays and
public holidays**

**Opening hours:
09.30 AM to 06.00 PM**

**Ticket Counter Timing:
09.30 AM to 05.30 PM**

Closed on Holi & Diwali.

Entry fee per visitor to Science Centre & its special facilities.

Particulars	Amount
Entry Ticket to Science Centre Only	
• General Visitors	Rs.70/-
• Group of Visitors (15 or more)	Rs.60/-
• Students in organised group with authority letter	Rs. 20/-
• Students from Govt./Municipal Schools with authority letter	Rs. 10/-
• BPL card holders on producing the card	Rs. 5/-
Entry Ticket ONLY to Science Park - General Visitors	Rs.20/-
Special shows - Science Odyssey	
• General visitors	Rs.80/-
• Group of Visitors (15 or more)	Rs.70/-
• Students in organised group with authority letter	Rs.50/-
• Students from Govt./Municipal Schools with authority	Rs.25/-
Motion Simulator Ride	
• General visitors	Rs.50/-
• Group of Visitors (15 or more)	Rs.40/-
3D Science Show / Science on Sphere	
• General visitors	Rs.30/-
• Group of Visitors (15 or more)	Rs.25/-
• Students in organised group with authority letter	Rs.20/-
• Students from Govt./Municipal Schools with authority letter	Rs.10/-
Science Film Show / Science Demonstration Lecture (on prior booking)	Rs.10/-
Package ticket for Science Centre & Science Odyssey	
• General visitors	Rs.130/-
• Group of Visitors (15 or more)	Rs.110/-
• Students in organised group with authority letter (Non-Member Schools)	Rs.60/-
• Students in organised group with authority letter (Member Schools)	Rs.50/-
• Students from Govt./Municipal Schools with authority letter	Rs.25/-
Special Packages	
• Science Centre, 3D show & SOS show for General visitors (Science Centre, Science Odyssey, Sparkling High Voltage, 3D show & SOS show)	Rs.100/-
• Students in organised group with authority letter (Non-Member Schools)	Rs.90/-
• Students in organised group with authority letter (Member Schools)	Rs.75/-
• Students from Govt./Municipal Schools with authority letter	Rs.40/-
Family Packages	
Science Centre, Science Odyssey, Sparkling High Voltage, 3D show, SOS show & Motion Simulator Ride.	
• Family of 4 members	Rs.600/-
• Family of 6 members	Rs.900/-
(Buy Family Ticket to Save & have lot of FUN)	
Parking Charges	
2 Wheeler	Rs.30/-
4 Wheeler	Rs.50/-

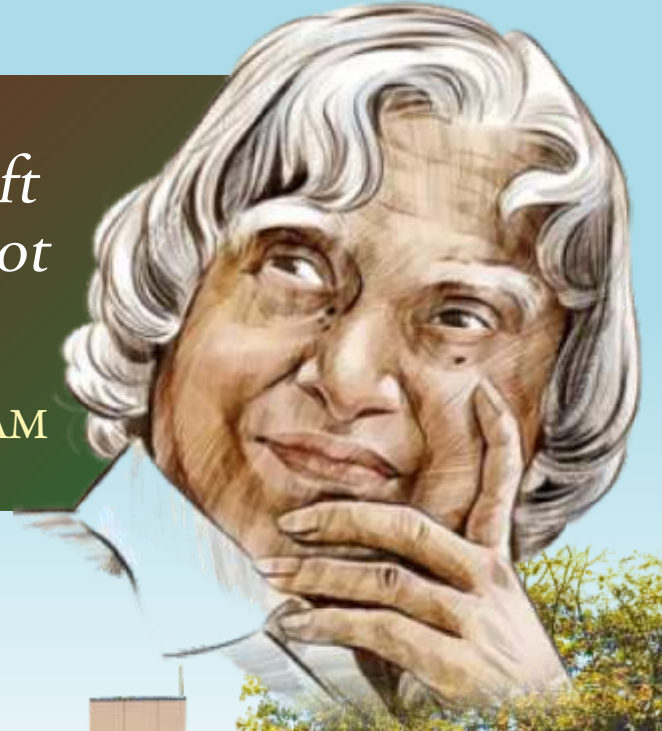
Free Entry only to Science Centre :

- Children up to 3.4 feet (102 cm) of height
- Defense & Paramilitary forces in uniform
- Physically challenged persons and ICOM members

For other facilities visitors have to pay specified fee as per the category.

*'Science is a beautiful gift
to humanity; we should not
destroy it'*

- DR. APJ ABDUL KALAM









नेहरु विज्ञान केन्द्र

राष्ट्रीय विज्ञान संग्रहालय परिषद् की इकाई,
संस्कृति मंत्रालय, भारत सरकार
डा. ई. मोजेस मार्ग, वर्ली, मुंबई-400 018

Nehru Science Centre

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