







NEHRU SCIENCE CENTRE

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FROM NSC, MUMBAI

Dear Friends

Greetings from Nehru Science Centre!

This year summer vacation will certainly be special for all of us. I am sure you all have already completed your annual examination and must be waiting for the new academic year and the forthcoming summer vacation. We too are waiting for these. After all, we shall be feeling the joy of vacation after 3 long years. We all were confined to our houses due to COVID 19 pandemic and could not enjoy them. As you all were unable to join us, we too missed the crowd of young budding scientists at the science centre during the last three years especially during the vacations. Looking forward to seeing you all in our hands-on, fun-filled creative activities.

Friends, this year in our science park which is considered as the world's first children science park also, we have added a couple of new exhibits. You must have heard about a quote by Archimedes. It is "Give me a place to stand, and a lever long enough, and I will move the world". Next time you visit NSC, please do not forget to try your hands on the Giant Lever exhibit and enjoy the lifting of a car with a very small effort only. Have a feel of what Archimedes said centuries ago. One more exhibit installed is to see a hole in your, otherwise intact, palm. It is amazing to see this illusion. Another one is a perspective house. It has only two walls but it appears like a complete house when seen in a certain manner. Even amazing is that its orientation and view change as you move in front of it.

I know during this time many of our student and institutional members wait for the announcement of summer vacation creative science workshops. Please note that the registration for all the workshops will start from 1st April onwards. It will be an online process but if needed you can visit and register at our place in presence of our team also but that too in the online mode only. Payment will also be accepted online as well as cash. So check the website and social media channels for announcements. We have added several new experiments which we developed during the pandemic.

We are committed to improving our esteemed visitors experience and are continuously striving to maintain the exhibits and ambiance. Do you know that we have 21 different facilities for visiting? 14 exhibition halls, and special facilities of 3D science show, Science on a Sphere (SOS), motion simulator, Science Odyssey, Live Science demonstrations, Wonderful Sparkling High Voltage Demonstration, A walk through Heart model, fighter plane simulator by Indian air-force and Innovation Hub to convert your idea to a product.

In the last quarter, we organised Astro Voyage – a treat with celestial objects, Astro Night tourism at Nariman Point and Kala Ghoda festival, where close to 8K people watched the Moon, Jupiter, Venus and Orion nebula live. While students visited the science centre taking advantage of package tours, several young ones also celebrated their birthday in the SCI-BIRTHDAY event.

We have commemorated National Science Day on a grand scale during which we launched a new demonstration on matter at low pressure and giant soap bubbles. We also organised western India Science Fair and Innovation Festival successfully. We also hosted Dr Anita Sengupta, CEO Hydroplane, USA. In nutshell, we had a busy quarter and hope to continue in the forthcoming one as well.



From NSC, Mumbai Exhibit at the Centre What's New? Mathematics puzzles **Our Science & Technology Heritage** Indian Scientist Book worth Reading in NSC Library Creativity **Tree Treasure at NSC How Things Work? Upcoming Programmes** Did you know? In The Last Quarter... NSC- A Wonderland of Science **Regular Programmes / Activities General Information**

EXHIBIT AT THE CENTRE

ECHO TUBE



The Echo Tube exhibit in the Children Science Park of the Centre is a fascinating attraction that demonstrates the principles of sound

waves and how they travel through different mediums. The exhibit consists of a long tube into which visitors can speak or clap at one end of the tube and hear the sound bouncing back to them from the other end, creating an echo effect. Sound waves travel through the tube at about 330 meter per second and come back reflected from other end. One can distinguish an echo, if the reflected sound arrives at your ears at least onetenth of second after the original sound.

The Echo Tube exhibit is an interactive way to introduce visitors to the science of sound waves and their behavior in different environments. It provides a fun-filled way to explore the properties of sound and how it can be manipulated and controlled. The exhibit is suitable for all ages and is one of the popular attractions at the Nehru Science Centre's Science Park. India's new milestone in space science - AzaadiSAT-2



JHOT

India achieved a new milestone in space science when the Indian Space Research Organisation (ISRO) launched the Small Satellite Launch Vehicle (SSLV) and successfully delivered payloads to the orbit. It was launched from the Satish Dhawan Space Station, Sriharikota in February 2023. The SSLV-D2 dropped 3 micro-satellites named EOS-07, AzaadiSAT-2, and Janus-1 at an altitude of 450 km from the earth within 15 minutes of the launch.

The AzaadiSAT-2 satellite, weighing 8 kg, has voice and data transmission equipment, a selfie camera, and also UHF and VHF transponders. It carries 75 different payloads each weighing around 50 grams. The payload is intended to measure pressure and temperature. It can conduct small scale experiments and also has amateur

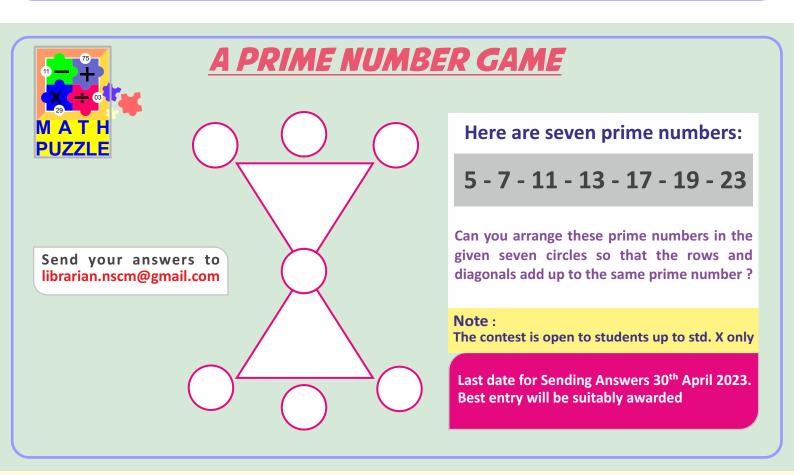
radio communication capabilities.

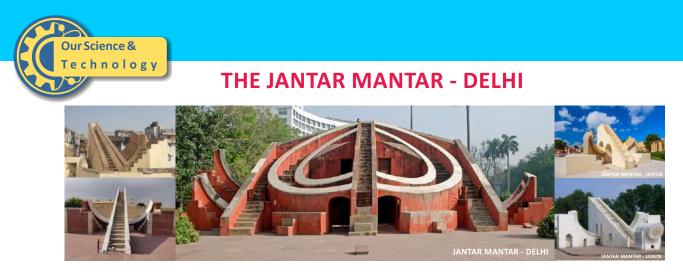
To commemorate 75 years of Independence of India, around 750 girl students from 75 different government schools from rural India were selected for fabricating and developing this satellite. They contributed to the design and construction of the satellite built by Chennai-based startup SpaceKidz India.

SpaceKidz developed basic and simple experiments that students can learn and assemble with the simultaneous support of their science teachers. The experimental materials kit were sent to students who did programming for the chip that went into the payload using the Arduino box. The girls were provided both online and offline guidance to build these payloads.

It was first of its kind space mission with an all women participation to promote women in STEM. This mission was launched on February 10, 2023, on which United Nations celebrated 'International Day of women and girls in science'. All the girl students succeeded to achieve their goal. This opportunity has surely created a spark in these young girls from rural India to make their career in space science.

https://timesofindia.indiatimes.com/city/kozhikode/students-on-cloud-nine-after-azaadisat-2-launch-in-andhra-pradeshs-sriharikota/articleshow/97816726.cms?from=mdr





The 'Jantar Mantar' in Delhi is an astronomical intriguing structure is the Ram Yantra, which looks observatory that was built by the Rajput King Sawai Jai Singh II in 1724. It is one of five Jantar Mantars built by Jai Singh II, the others being located in Jaipur, Ujjain, Mathura, and Varanasi. The construction of the Jantar Mantar in Delhi was a part of Jai Singh II's efforts to reform the Indian calendar and improve astronomical calculations. The observatory was designed to measure time, track celestial bodies, and predict eclipses with great accuracy.

The Jantar Mantar in Delhi, consisting 13 instruments, including the Samrat Yantra - one of the largest sundial in the world and the Jai Prakash Yantra, which is used to measure the positions of celestial bodies. The observatory also includes the Misra Yantra, combination of five different instruments, that can be used to measure the declination and altitude of the sun and other stars. Perhaps the most culture of science in India at that time.

like a miniature model of a Roman Ampitheatre. Climbing to the top of the Samrat Yantra - a 70 foot high giant triangle that worked as an equal hour sundial - provides an excellent view. Jai Singh II was a patron of science and technology, and his contributions to astronomy were widely recognized during his lifetime itself. He corresponded with several prominent European astronomers, including Edmond Halley, and even invited them to visit his observatories in India.

Today, the Jantar Mantar in Delhi is a popular tourist attraction and a testament to the scientific prowess of ancient Indian astronomers. It has been declared a UNESCO World Heritage Site and is considered an important cultural and historical landmark in India. It also testifies the presence of

Indian Scientist

Dr. Vijay P. Bhatkar was a brilliant computer scientist and physicist who is best known for his pioneering work in supercomputing and highperformance computing. Dr. Bhatkar's journey began in



DR. VIJAY P. BHATKAR

a small village in Maharashtra, India, where he was born in 1946. Despite growing up in a rural setting, he showed an early interest in science and technology. He went on to study engineering from Visvesvaraya Regional Collage of Engineering (VRCE) Nagpur nowadays known as VNIT. Later he received a Ph.D. in Engineering

from the Indian Institute of Technology, Delhi.

In the early 1980s, Dr. Bhatkar began his work on developing a supercomputer for India, which he called the PARAM (Parallel Machine). It was a challenging task that required him to overcome many technical and

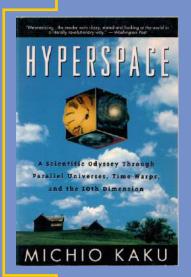
financial obstacles, but his persistence paid off. In 1991, PARAM became the fastest supercomputer in India and one of the fastest in the world.

He later established the Center for Development of Advanced Computing (C-DAC), which has become one of India's leading research and development organizations in the field of supercomputing and high-performance computing. Throughout his career, he remained committed to using science and technology for the betterment of society. Dr.Vijay P. Bhatkar has received numerous awards and honors for his contributions to the field of computer science and technology. Some of the special awards he has received are Padma Shri in 1986, Maharashtra Bhushan in 2000 & Padma Bhushan in 2021.

Dr. Vijay P. Bhatkar's life is a testament to the power of persistence, hard work, and innovation. He will always be remembered as a visionary scientist who helped bring India to the forefront of the global supercomputing industry



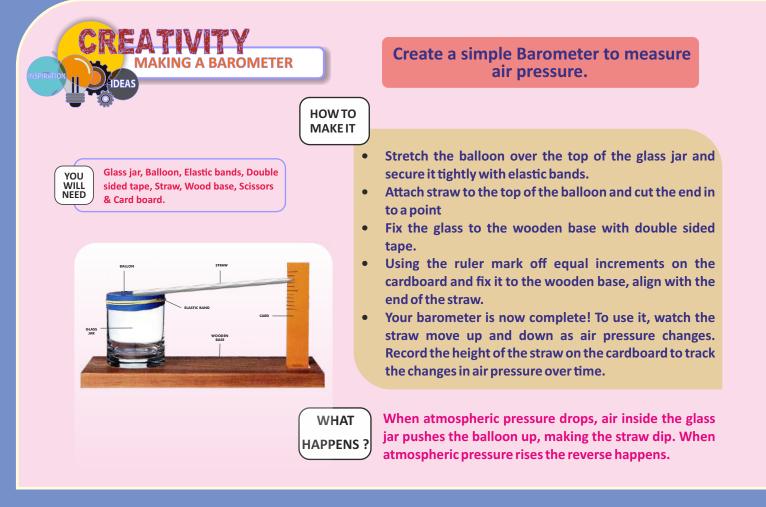
Book Worth Reading In Library



"Hyperspace: A Scientific Odyssey through the 10th Dimension" by Michio Kaku is a fascinating exploration of the concept of hyperspace and the possibility of higher dimensions in our universe. Michio Kaku, a renowned physicist, takes the reader on a journey through the history of physics, from Einstein's theory of relativity to the latest theories of quantum mechanics.

Kaku explains complex concepts in a clear and accessible manner, using realworld examples and analogies to help readers understand the science behind hyperspace. He also explores the philosophical and cultural implications of the idea of higher dimensions, touching on topics such as science fiction and the role of science in society. One of the strengths of the book is author's ability to balance theoretical physics with more practical applications, such as the potential use of hyperspace for faster-than-light travel and communication. The book also includes interviews with other prominent physicists, providing a range of perspectives on the topic.

Overall, "Hyperspace" is an engaging and thought-provoking book that will appeal to anyone interested in the mysteries of the universe and the cutting-edge science behind them. While the subject matter can be complex at times, Kaku's clear and engaging writing style makes the book accessible to a wide range of readers.







Botanical Name: MAGNOLIACHAMPACA

Family: MAGNOLIACEAE

Magnolia champaca is beneficial for the heart since it acts on LDL(low-density lipoprotein) cholesterol and clears it from the circulation. It promotes heart

function and makes the blood healthy. Champak is a large evergreen tree. It was previously classified as Michelia Champaca. It is known for its fragrant flowers and its timber, used in wood working. Champak comes from the Sanskrit word champaka. Other vernacular names in English include joy perfume tree, yellow jade orchid tree and fragrant Himalayan champaka.

Champak grows upto 50 metres or taller. Its trunk can be upto 6-6.5 ft. in diameter. The tree has a narrow umbelliform crown. It has strong fragrant flowers in varying shades of cream to yellow-orange which bloom during June to September.

In India, the flowers are used for worship at temples and more generally worn in hair by girls and women as a means of beauty ornament as well as a



A flatbed scanner is a type of scanner that is commonly used to digitize printed images or documents. The scanner consists of a flat glass surface, on which the document or image to be scanned is placed.

Flatbed scanners work based on the principles of reflection and light sensing. When the scanning process is initiated, the scanning head illuminates the document or image with a light source, which causes the light to reflect off the surface and into a series of mirrors and lenses that redirect the light onto a photo sensitive sensor array.

The sensor array then captures the reflected light and converts it into a digital

GLASS PLATE

natural perfume. Flowers are floated in bowls of water to scent the room, as a fragrant/ floral decoration for bridal beds and for garlands.

Medicinal uses of Magnolia champaca:

- Magnolia champaca is non-toxic, consuming the flower and its juice twice daily will provide relief for those who experience difficulty or pain when urinating. Michelia champaca aids in promoting urine flow.
- Magnolia champaca's antibacterial properties aid in the prevention of infections. For this reason, as well as its exquisite smell, the Hindus venerate them.
- The Golden Champa tree facilitates the spermatogenesis-related cell division process.
 The sperm count is increased by taking the leaf extract once each week.

Source :

Information obtained from Wikipidia and other related Website

image, which is transmitted to a computer and saved as a file. Most flatbed scanners also come with software that allows users to adjust the settings of the scan, such as resolution, color depth, and file format.

This allows users to finetune the scanning process to produce the highest quality image possible for their particular needs. Overall, flatbed scanners are a reliable and easy-to-use tool for digitizing printed images and documents, and have become an essential part of many workplaces and homes.

UPCOMMING PROGRAMMES

- World Autism Awareness Day 2nd April 2023
- World Earth Day 22nd April 2023

National Technology Day – 11th May 2023

- International Museum Day 18th May 2023
- No Tobacco Day 31st May 2023
- World Environment Day 5th June 2023

Summer Vacation Creative Science Workshop 21st April to 30th June 2023 For Details Visit : https://nehrusciencecentre.gov.in

DID YOU KNOW?



One of the most common misconceptions about the Sun is that it is burning. In fact, the Sun is not a burning ball of fire but a massive, glowing sphere of gas that generates its energy through a process known as nuclear fusion – a nuclear reaction. Have you heard of it?

Nuclear fusion occurs when a lighter atomic nuclei combine to form heavier nuclei, releasing energy in the process. In the case of the Sun, hydrogen atoms combine to form helium atoms, and this process generates an enormous amount of energy in the form of light and heat. Well that is happening inside the sun right now.

As the fusion process continues, the helium atoms that are formed sink towards the center of the Sun, where they create even more energy through fusion. This process continues for billions of years, with the Sun gradually using up its hydrogen fuel and producing more and more helium. So, there is no normal flame in the sun as we have a fire name on Earth.

So, the next time someone tells you that the Sun is burning, you can correct them by explaining that it is actually a giant nuclear fusion reactor generating the energy that keeps our planet and the rest of the solar system alive.





The Taj Mahal is a world-renowned monument located in Agra, India. However, this iconic structure is currently facing a grave threat from pollution and environmental degradation. Over the years, the Taj Mahal has been exposed to a variety of pollutants, including sulphuric acid, nitric acid, and acid rain. These pollutants have caused severe damage to the marble surface of the

monument, resulting in corrosion and deterioration. This is also termed as marble cancer by some people.

One of the primary causes of this pollution is industrialization. The factories and industries located in and around Agra release large amounts of sulphur dioxide and nitrogen oxide into the atmosphere. These gases, when mixed with water vapors in the air, create acid rain, which falls on the marble surface of the Taj Mahal. The acid rain not only corrodes the marble but also weakens the foundation of the monument.

Another source of pollution is vehicular traffic. The large number of cars and buses that ply the roads near the Taj Mahal emit pollutants like carbon monoxide and particulate matter. These pollutants settle on the marble surface of the monument and form a layer of grime and soot. Over time, this layer can cause permanent damage to the marble.





Sci-Birthday



During this month 01 science birthday was organized at the Centre. On 15.01.2023, 30 children along with parents joined the celebration. They enjoyed the 3D show, Motion Simulator show, Science on Sphere & Science Demonstration show.

Inter-school Science Quiz Contest Preliminary Round (English & Marathi)





The preliminary round of English and Marathi medium quiz was conducted on 11th January 2023. The Quiz was inaugurated by Chief Guest Rtn. Sandip Agarwalla, District Governor, Rotary Club of Bombay. The Quiz covered various interesting and entertaining questions on Chemistry, Biology, Math, General Knowledge, Physics. Over 350 students and 36 teachers from both the mediums attended the preliminary round.

Astro-Voyage

The Centre started a new initiative this month named Astro-Voyage. The programme was held at the

Sr. No.	MONTH	NO OF PARTICIPANTS
1	JANUARY DATE : 8, 14, 21, 22, 28, 29	615

In this event participants were given guided sky observation sessions. The three-hour event consisted of a session by Dr. Anindita Mondal, Curator, Nehru Science Centre Mumbai, on basic and positional Astronomy along with some interesting facts. The session was also followed by SOS show with solar system objects and live sky observation program through telescopes. Planets: Venus, Saturn, Jupiter and Mars were also show to the participants. On 22.01.2023, the visitors observed the event Saturn-Venus Conjunction.

Popular Science Lectures

The Centre organized a Popular Science Lectures on following dates:

1. PSL - Vagaries in Monsoon: Role of Climate Change





The Centre organized a lecture on the topic Vagaries in Monsoon: Role of Climate Change. Dr. M. R. Ramesh Kumar, Chief Scientist (Retired), Physical Oceanography Division, National Institute of Oceanography, Goa was the speaker of this lecture. The speaker discussed the role of the various Ocean Atmospheric Processes on the three important aspects of the Indian Summer Monsoon, using a suite of data sets such as in situ, satellite and Reanalysis products. Further, he also explained us the role of El Nino, La Nina, IOD etc., on the monsoon activity over the Indian Subcontinent. In all 160 students attended the programme.



2. PSL-Bell's theorem



The Centre organized a hybrid lecture on the topic Bell's theorem: The Most Profound Discovery of Science. Dr. Manik Banik, Associate Professor, Department of Physics of Complex Systems, S. N. Bose National Centre for Basic Sciences (SNBNCBS), Kolkata was the speaker of this lecture. The speaker discussed the historical and philosophical background of Bell's 1964 theorem, the classical worldviews challenged by this theorem, and explained why the experiments of Aspect-Clauser-Zeilinger are worthy of the Nobel prize. Finally, he will also elaborate on how this basic theorem of quantum foundations motivates the new era of 2nd quantum revolution. In all 20 college students and 214 school students attended the lecture. The lecture was also streamed on the Facebook page of the Centre where the lecture had 64 views.

Mobile Science Exhibition

The Centre organized a Mobile Science Exhibition (MSE) 'Health and Hygiene' in the govt. schools of thane and Palghar districts. Apart from the exhibition, SDL & film shows were also organized during the month.

Mobile Science Exhibition

The Centre organized a Mobile Science Exhibition (MSE) in the govt. schools of Ahmednagar and Baramati districts. Apart from the exhibition, SDL & film shows were also organized during the month.

Package Tour

In February 1,371 package tours were organized for a total of 9,022 students, teachers & general visitors. They were given a Guided tour of the galleries, Science Odyssey, and Science on Sphere show. Science Shows were also organized for them.

Sci-Birthday



During this month 04 science birthdays were organized at the Centre. On 03.02.2023, 11.02.2023, 18.02.2023 and 26.02.2023 respectively. 30 children along with parents joined the celebration on each of the above-mentioned dates. They enjoyed the 3D show, Motion Simulator show, Science on Sphere & Science Demonstration show.

Innovation Festival and Western India Science Fair 2023



Western India Science Fair and Innovation Festival were organized jointly at the Centre from 01.02.2023 to 03.02.2023. The Fair and the Festival was inaugurated by Dr. Shankar V. Nakhe, Director, Raja Ramanna Centre for Advanced Technology, Indore & Chairman, Executive Committee of Nehru Science Centre, Mumbai on 01.02.2023.

The Fair was organized in collaboration with

Education Department of Govt. of Maharashtra, Madhya Pradesh, Chhattisgarh, Goa, Department of Science & Technology, Rajasthan and Union territories of Daman & Diu and Dadra & Nagar Haveli. 22 students' projects and 15 teachers' projects were on display.

The 5th Innovation Festival was organized in collaboration with institutes like Advanced Centre for Treatment, Research and Education in Cancer (ACTREC), Navi Mumbai, Centre for Development of Advanced Computing (CDAC), CSIR - National Chemical Laboratory, Pune, Department of Atomic Energy, Mumbai, Haffkine Institute for Training, Research and Testing, Parel, Homi Bhabha Centre for Science Education (HBCSE), ICAR - Central Institute on Fisheries Education, Mumbai, ICAR - Central Institute for Research on Cotton Technology, ICMR - National Institute of Virology, ICMR-National Institute for Research in Reproductive and Child Health, Parel and Tata Institute of Fundamental Research (TIFR), Mumbai and National Innovation Foundation.

Innovation Festival had a section for young innovators wherein the district level and Inspire award winning 08 students' projects from Mumbai region were invited to participate. In addition, there were projects from organizations like Sa.ku.ra—mi, Salaam Bombay Foundation and Ahmed Abdullah Garib I.T.I, Mumbai. Apart from these, the Centre also organized other activities such as Make and Take workshops, Science demonstrations, workshop on Artificial Intelligence & Robotics, workshop on Science Toy Making.

The participants of the Fair and festival were also exposed to various facilities of Nehru Science Centre during their 03 days' stay in the campus. The programmes for the participants included – Live Streaming of Green Comet, Science Odyssey show, Motion simulator, 3D shows etc.

Prize distribution and Valediction Ceremony of the Fair and festival was held on 03.02.2023, Sh. Arvind Paranjpye, Director-Planetarium, Nehru Centre, Mumbai was the Chief Guest on this event. The Centre received around 5,638 visitors in these 03 days event.

Some Glimpse :



Outreach Sky Observation Programme



The Centre in collaboration with Chhatrapati Shivaji Maharaj Vastu Sangrahalaya (CSMVS) participated in the Kalagodha Arts Festival 2023 for Sky observation programme titled 'Astro-Voyage with National Council of Science Museum – Your destination for Astro-Tourism' on 04.02.2023 and 05.02.2023. The programme was conducted in the premises of CSMVS. Visitors were shown planets like Jupiter, Venus, Saturn, Mars and Moon. 300 visitors enjoyed the Sky Observation programme.

Workshop for Underprivile

The Centre organized a sponsored workshop for 20 underprivileged students on 17.02.2023. They were exposed to various facilities of the Centre like, SOS, 3D films show, Science Odyssey, High Voltage along with Gallery visit. The students were also given Science Toy making sessions in which they made toys like Woodpecker, Newton's Disc & Newton 3rd Law. They were also provided with refreshment and science kits.

Inter-school Science Quiz Contest

The Centre in collaboration with the Rotary Club of Bombay Pier and the Rotary Club of Bombay Queen City is organizing the much-awaited Annual Interschool Science Quiz Competition. The written elimination test of this Quiz was conducted on 11.01.2023 (For both English & Marathi medium schools). In all 173 schools participated in the written test.

The Verbal quiz rounds were conducted separately for both English & Marathi medium students. Four schools were qualified for Final rounds which were conducted on 20.02.2023 for Marathi medium schools and on 21.02.2023 for English medium schools. The Grand Finale and Valediction of the Annual Inter-school Science Quiz contest was conducted on 21.02.2023. Rtn. Dr. Rajendra Agarwal, was the Chief Guest for the Valediction Ceremony of the Inter-School Science Quiz Contest. Over 300 students from both the mediums attended the Grand Finale, Prize Distribution & Valediction programme.

National Science Day Celebrations 2023

National Science Day 2023 was celebrated at the Centre, from 22.02.2023 to 28.02.2023 to mark the well-known discovery of a great Indian Scientist Sir. C. V. Raman, by organizing the following programmes and competitions for school/college students, teachers and the general public. The theme of this year's National Science Day celebration was "Global Science for Global Wellbeing".

Slogan Writing Contest

Slogan Writing Contest was organized at the Centre for registered participants on 22.02.2023. 145 participants registered for the event. The topic for the Contest was 'Science for all'. Prizes were given to the winners on the concluding day 28.02.2023 of National Science Day Celebrations.



New Science Demonstration





The Centre launched a new Science demonstration on Topic 'Matter at Low pressure', where you can enjoy the dramatic behaviors of matter at low pressure. 234 students enjoyed the show and shared their positive feedback

Written Science Quiz



As a part of National Science Day Celebrations, the Centre also organized Written Quiz Contest for students from Std 7th - 10th on the topic 'Science and Technology for Human Welfare'. 72 students participated in the Written Science Quiz contest held on 23.02.2023.

Demonstration by C - DAC

A Demonstration cum lecture on the topic 'Online labs (OLabs)' developed by C-DAC was organized on 23.02.2023 for the students and teachers in hybrid mode. The lecture was given by Dr.

B. Sasikumar, Executive Director, C-DAC, Mumbai. 296 students, teachers and parents attended the programme physically and 454 students attended the programme via Zoom. The programme was also streamed on the Facebook page of the Centre.



Street Play Contest





Street Play Contest was organised at the Centre on 24.02.2023 in which 06 schools participated. The theme of play was 'Science for better life'. 06 Street Plays were performed by 60 Students. 150 visitors enjoyed the street play competition. Sh. Bharat More, who has wide theater experience and who has performed 2,500 street plays was one of the judges of this event. Sh. More shared his idea about how real street plays should be performed and educated participants with tips for street play.

Painting Contest



On 25.02.2023 Painting contest was held in 03 different categories. The topic for Category A was

'Nature around us' in which 98 students upto Std. 4th participated. For Category B topic was 'Space Tourism' in which 206 students of Std. 5^{th} to 7^{th} registered and for Category C the topic was 'Life on earth by 2050' in which 300 students of Std. 8^{th} to 10^{th} registered.

Giant Bubble Show



The participants enjoyed making bubbles of different shapes and sizes in this workshop. Students were explained the reasons behind formation of bubbles, their bursting and their change in shapes and sizes. The workshop was conducted on 26.02.2023 and 156 visitors enjoyed this workshop.

Astro Voyage



The Programme began by a Popular Science Lecture by Dr. Joe P. Ninan from TIFR, in which Dr. Ninan explained about exo-planets. The session was also followed by SOS show on exoplanet followed by sky observation program through telescopes. The threehour event consisted of a session by Dr. Anindita Mondal, Curator, Nehru Science Centre Mumbai, on basic and positional Astronomy along with some interesting facts.

Chalte-Chalte Quiz



On the spot quiz 'Chalte Chalte' was organized for the visitors of the Science Centre. The visitors were asked questions based on the theme 'Global Science for Global Wellbeing' visitors who gave the correct answers were given prizes. This quiz was conducted on 27.02.2023 & 28.02.2023.369 Visitors participated in the event.

Science Show



The Centre organized a Science Show on 28.02.2023 in which experiments related to pressure, air, water and liquid nitrogen were shown to the students. 230 students enjoyed the show in this 02 days event.

Make and Take Workshop



On 28.02.2023 students participated in the make and take workshop and made 05 different types of models including Bat plane, rotocopter, butterflies, etc. 365 students participated in this Workshop.

C. V. Raman Memorial lecture



The Centre organized a Popular Science Lecture on the topic 'Science for Global Welfare' by Prof. B. N. Jagtap, Former distinguished Scientist & Director, Chemical Group, BARC, Mumbai on 28.02.2023. 260 students attended the lecture in offline mode and 06 schools will be attending the lecture via Zoom.

Valediction and Prize Distribution



Prize distribution Ceremony of National Science Day Celebrations was held on 28.02.2023. Prof. B. N. Jagtap, Former distinguished Scientist & Director, Chemical Group, BARC, Mumbai was the



Chief Guest of this event. Prof B. N. Jagtap, handed over the prizes to all the winners of all the Contests held as a part of National Science Day Celebrations.

Experiment Skill



The Centre in collaboration with Bombay Association for Science Education organized a unique programme of Experiment Skill Test for 10 registered participants of 06th to 10th std at the Centre. In the test, questions related to physics, biology and chemistry were asked to the students. The students were also given experiment set-up in which they were supposed to do experiments in the presence of experts from the Centre and TIFR. Through this programme their skill for performing the experiment and keen observation was tested.

Programmes for Pratham Education Foundation



The Centre organized a two-day sponsored programme on 25.02.2023 and 26.02.2023 for students of Pratham Education Foundation. The programmes conducted were Model Rocketry making and launching the models with the help of solid chemical fuel and water rockets. Aeromodelling sessions in which the students were made aware of the basic principles of flight through the paper models of bat plane, Harrier, Dart plane. Workshop on Experiments with CD in which students learned different concepts of science by making toys like Newton's disk, CD Hovercraft, Balancing toy, illusions, etc using old CDs. Along with these workshops the students were also exposed to the various facilities of the Centre they were also give live Science Demonstration of Liquid Nitrogen, Science Toy Making and Colourful Chemistry. 40 students and 4 teachers enjoyed this 02-day event. 20 children participated in this workshop and made toys using Cds.

Mobile Science Exhibition

The Centre organized a Mobile Science Exhibition (MSE) 'Health and Hygiene' in the govt. schools of Palghar districts. Apart from the exhibition, SDL & film shows were also organized during the month.6,349 students 109 teachers and 05 general visitors experience this exhibition. 13 films were also shown in this month to about 5,203 visitors. 10 SDL shows were conducted to 4,731 visitors.



Mobile Science Exhibition



The Centre organized a Mobile Science Exhibition (MSE) in the govt. schools of Ahmednagar district. Apart from the exhibition, SDL, Rotocopter Workshops & film shows were also organized during the month. 5,597 students 99 teachers and 87 general visitors experienced this exhibition.





Sci-Birthday



During this month 03 science birthdays were organized at the Centre. On 05.03.2023, 11.03.2023 & 18.03.2023 respectively. 30 children along with parents joined the celebration on each of the abovementioned dates. They enjoyed the 3D show, Motion Simulator show, Science on Sphere & Science Demonstration show.

Online Workshop 08.03.2023



The Centre held a web session on the basics of plant-based skincare products on International Women's Day 08.03.2023. This workshop was led by Ms. Maitri Bheda, the founder of Plants Academy. The speaker gave the group a general overview of skincare products during the class, outlining their makeup and principles of operation. Also, the audience was taught the art and science of herbs and how to successfully use the products in daily life. This virtual workshop included 150 participants.

Amritkaal Video Series

The Centre has posted three films on the topic of atmospheric pressure, why is it colder up on the mountains? and what is exactly an Equinox as part of its ongoing World Science Facts series. The video was posted on the Facebook and Instagram handle of the Centre on 06.03.2023, 13.03.2023 and 21.03.2023. These videos have been viewed more than 2,187 times online.

Outreach Sky Observation Programme



The Centre in collaboration with Chhatrapati Shivaji Maharaj Vastu Sangrahalaya (CSMVS) participated in the Kalagodha Arts Festival 2023 for Sky observation programme titled 'Astro-Voyage with National Council of Science Museum – Your destination for Astro-Tourism' on 04.02.2023 and 05.02.2023. The programme was conducted in the premises of CSMVS. Visitors were shown planets like Jupiter, Venus, Saturn, Mars and Moon. 300 visitors enjoyed the Sky Observation programme.

Programmes for Pratham Education Foundation



The Centre organized a two-day programme on 04.03.2023 and 05.03.2023 for students of Pratham Education Foundation. The programmes conducted were Model Rocketry - making and launching the models with the help of solid chemical fuel and water rockets. Aeromodelling sessions in which the students were made aware of the basic principles of flight through the paper models of bat plane, Harrier, Dart plane. Workshop on Experiments with CD in which students learned different concepts



of science by making toys like Newton's disk, CD Hovercraft, Balancing toy, illusions, etc using old CDs. Along with these workshops the students were also exposed to the various facilities of the Centre. The students were give live Science Demonstration of Liquid Nitrogen, Science Toy Making and Colourful Chemistry. 40 students and 4 teachers enjoyed this 02day event. 20 children participated in this workshop and made toys using CDs.

Ricky Kej Live Concert



As part of the Mumbai Kaustubh project run by Azadi Ka Amrit Mahotsav, the Centre partnered with the National Gallery of Modern Art (NGMA) to host a live concert. On 19.03.2023, the Gateway of India served as the venue for a live performance by threetime Grammy Award winner, renowned musician, and environmentalist Ricky Kej and his band. The performance represented a development for Mumbai's cultural spaces. Around 4,000 music lovers attended the concert.

Astro-Night



On 18.03.2023, the Centre hosted Astro-Night as part of Mumbai Kaustubh at Marine Drive. The Centre collaborated with institutions, including the Nehru Planetarium, HBCSE, TIFR & CSMVS, and Sky Explorer. Visitors had access to 15 telescopes in all. Visitors were shown planets and objects including Venus, Jupiter, the Orion Nebula, Sirius, the Beehive star cluster, the Pleiades star cluster, and the Solar Spots. More than 7,500 astrophiles took part in the activity.

World Water Day

World Water Day was commemorated on 22.03.2023 at the Centre by organizing Chalte-Chalte quiz. Questions and facts regarding water and the significance of World Water Day were asked to the visitors. On-the-spot prizes were given to winners. Around 211 visitors took part in Chalte-Chalte quiz.



Popular Science Lectures Unleashing the Power of Nanotechnology



The Centre organized a Popular Science Lecture on the topic Unleashing the Potential of Nanotechnology by Dr. Kinshuk Dasgupta, Scientist, BARC, Mumbai. The speaker informed the audience on the fundamentals of nanotechnology, its current and future applications, nanoscale fabrication methods, materials with unique features like nanotubes and graphene, and cutting-edge research in industries including defence, energy, and biosensing. The speaker also discussed some of his professional and personal experiences with nanotechnology. The lecture held in the Center's auditorium was attended by about 198 students, while the zoom lecture was attended by 45 students.

The Future of transportation



The Centre organized a Popular Science Lecture on the topic Future of Transportation by Dr. Anita Sengupta, CEO Hydroplane Ltd., Research Professor of Astronautics, University of Southern California. Dr. Sengupta spoke on how Space Age technology is enabling the revolution in environmentally friendly transportation. She also provided details about her actual engineering projects, such as the development of a hydrogenpowered aircraft by her company Hydroplane and the world's first Hyperloop in Las Vegas, Nevada. The talk held in the Center's auditorium was attended by about 256 students.

SCI-BIRTHDAY CELEBRATION



Looking for a unique and exciting way to celebrate your child's birthday in Mumbai? Look no further than SCI-BIRTHDAY at Nehru Science Centre!

Our innovative approach to birthday celebrations offers thrilling and fun-filled activities that will keep your child and their friends will have a blast while learning something new. Participate in our amazing shows and scientific activities for a fullon edutainment experience that your child will never forget. Don't miss out this one-of-a-kind opportunity to celebrate your child's special day. Contact our Education Officer today at 022-24932667 Ext. 217, 218 & 219 from 10.00 am to 6.00 pm for further details and to book your child's SCI-BIRTHDAY celebration!!

Glimpses of Science Birthday celebration





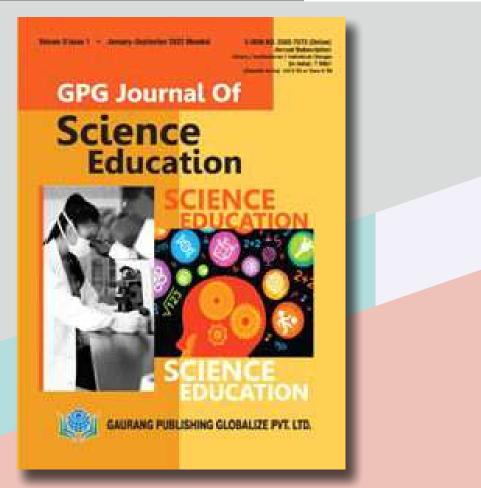




VACATION CREATIV SCIENCE WORKS	CREATIVE SCIENCE
APRIL 21 - 23, 2023 & MAY 05 - 07, 2023 (10.30 AM - 01.30 PM)	MAY 8 - 12, 2023 (11.00 AM - 02.00 PM)
₹750/- SCIENCE SPARKLE STD. 3rd T0 5th (60 PER BATCH)	ARDUINO UNO STD. 8th TO 10th (20 PER BATCH) ₹3000/-
MAY 8 - 12, 2023 (11.00AM TO 2.00PM) • ART & CRAFT STD. 4th TO 7th • MODEL ROCKETRY: UP, UP AND AWAY STD. 6th TO 8th • THE PAPER PILOT: LEARN TO MAKE AND FLY PAPER PLANES AND FLY PAPER PLANES STD. 7th TO 10th • ASTRONOMY LEVEL - I STD. 7th TO 10th	MAY 15 - 19, 2023 (11.00AM TO 2.00PM) • CLAY MODELLING STD. 4th TO 7th • MODEL ROCKETRY: UP, UP AND AWAY STD. 6th TO 8th • ELEMENTS OF SURPRISE CHEMISTRY STD. 7th To10th • THE PAPER PILOT: LEARN TO MAKE AND FLY PAPER PLANES AND FLY PAPER PLANES STD. 7th TO 10th • ASTRONOMY LEVEL -I STD. 7th TO 10th
MAY 22 - 26, 2023 (11.00AM TO 2.00PM) •MATH QUEST: EXPLORE MATHEMATICAL CONCEPTS STD. 6th TO 9th •PHYSICS FRENZY: EXCITING HANDS-ON ACTIVITIES TO DISCOVER SCIENCE STD. 6th TO 9th •IDEA TO REALITY: CREATING 3D DESIGNS STD. 7th TO 9th •THE PAPER PILOT: LEARN TO MAKE AND FLY PAPER PLANES STD. 7th TO 10th	MAY 29 - JUNE 2, 2023 (11.00AM TO 2.00PM) • MODEL ROCKETRY: UP, UP AND AWAY STD. 6th TO 8th • ELEMENTS OF SURPRISE CHEMISTRY STD. 7th TO 10th • PHYSICS FRENZY: EXCITING HANDS-ON ACTIVITIES TO DISCOVER SCIENCE
MAY 22 - 26, 2023 (11.00AM TO 2.00PM) 30 PER BATCH ₹ 2000/-	APRIL 29 – 30 & MAY 06 – 07, 2023 ₹ 2000/- (03.00PM TO 8.00PM) 30 PER BATCH
HUB ₹ 1000/- •INTEGRATED SCIE ONLINE ₹ 1250/- MAY 8 – 12, 2023	•ASTROPHOTOGRAPHY WORKSHOP OPEN TO ALL 30, 2023 (11.00 AM – 04.00 PM) 30 PER BATCH NCE (ALL SATURDAYS)
	STD. 7 [™] TO 10 [™] ITH FAMILY ₹ 1000/- APRIL 30, 2023 & MAY 21, 2023 (10.00AM TO 2.00PM) 20 PER BATCH FAMILY OF 4 (MAX) PERSONS (2+2) SCIENCE KE FUNDAY OPEN TO ALL
Choose any one discipline from each batch Limited seats - only 20 seats in each batch. Innovative Science	s experiments to explore new horizons in Science Exploration of science with fun exhibits of NSC Exciting quiz and live Science Demonstrations Film show and
Registration link: https://tinyurl.com/VCSWnscm Registration from 1st April, 2023. For further details and registration, please contact Education Section or call on 24920482/24900518	NEHRU SCIENCE CENTRE (A Unit of National Council of Science Museums, Ministry of Culture, Government of India) Dr. E. Moses Road, Worli, Mumbai – 400 018 Email: nscm.edu@gmail.com Web: https://nehrusciencecentre.gov.in

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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.

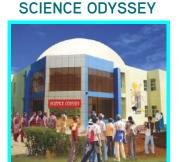


Permanent Exhibitions: The main building houses galleries full of exciting, interactive & interesting exhibits on topic relevant to school curriculum and for general public to make them appreciate Science with fun.



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



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: Journey to Space

Check our website for updates: https://nehrusciencecentre.gov.in/

Motion Simulator

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 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

Visit us: https://nehrusciencecentre.gov.in/

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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



Timing

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

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

Parking Charges 2 Wheeler 4 Wheeler	Rs.30/- Rs.50/-
T THE CICL	1(0.00)

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.





"All of us do not have equal talent, but all of us have an equal opportunity to develop our talent". - A. P. J. Abdul Kalam



नेहरु विज्ञान केन्द्र

संस्कृति मंत्रालय Ministry of Culture भारत सरकार Government of India



Nehru Science Centre

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• www.nehrusciencecentre.gov.ii