

Monthly Descriptive Report of Programmes and Activities organized at Nehru Science Centre, Mumbai at its Satellite Units for the month of March, 2023

NEHRU SCIENCE CENTRE, MUMBAI

Package Tour

In March, 34 package tours were organized for a total of 2,359 students & teachers at the Centre. 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 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 above-mentioned 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 had 150 participants.

Amritkaal Video Series

The Centre has posted four films on the topic of atmospheric pressure, why is it colder up on the mountains? what is exactly an Equinox? and Wheat flour & all other flour, as part of its ongoing World Science Facts video series. The video was posted on the Facebook and Instagram handles of the Centre on 06.03.2023, 13.03.2023, 23.03.2023 and 28.03.2023. These videos have been viewed more than 3,187 times online.

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 given live Science Demonstration of Liquid Nitrogen, Science Toy Making and Colorful Chemistry. 40 students and 4 teachers enjoyed this 02-day event. 20 children participated in this workshop and made toys using CDs.

Ricky Kej Live Concert on 19.03.2023

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 three-time 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 18.03.2023

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 on 01.03.2023**

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 had 45 attendees.

- **The Future of transportation on 13.03.2023**

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 hydrogen-powered 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.

Experiment Skill Test on 25.03.2023

The Centre in collaboration with Bombay Association for Science Education organized yet another programme of Experiment Skill Test for 20 registered participants of 08th to 12th 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.

Astro-Voyage on 28.03.2023

On 28.03.2023, a public event was held that was open to everybody. Guided sky-gazing sessions were offered to attendees of this event. In-house experts presented a lesson on fundamental astronomy throughout the three-hour event, along with other interesting facts. The alignment of Mercury, Venus, Uranus, Jupiter, and Mars was shown to visitors, along with the moon and sunspots on the sun. This event attracted 65 visitors.

Drone Workshop Cum competition

The Center held a drone workshop-cum-competition from 14.03.2023 to 16.03.2023, where students took part in not only the competition, but also had the chance to learn the fundamentals of this cutting-edge technology from professionals. Shri. Umesh Kumar Rustagi, Director, NSCM as well as distinguished guests Shri. Amit Thool and Shri. Gaurav Singh from Drona Aviation were present on the first day of the workshop. Students were inspired by the director's words to master new technology and put their skills to use in society. Students got hands-on experience in putting together their own drones. They also programmed the drone to perform certain duties for the assignments they were given. The competition's winner was announced on the final day of the workshop i.e., on 16.03.2023, a lecture by Shri Ankit Agrawal (Idrones, Mumbai) was also planned for the participants. 14 participants were part of this workshop.

RAMAN SCIENCE CENTRE, NAGPUR

National Science Day & Anniversary celebration 2023

The Centre has conducted many activities and programmes to mark National Science Day & Anniversary Week Celebrations from 24.02.2023 to 08.03.2023 on the theme 'Global Science for Global Wellbeing'. The following programmes were conducted in March 2023.

- **Elocution Competition** - The Election Competition for high school students was organised on 01.03.2023. Topic for the competition was "Global Science for Global Wellbeing". 17 students from various schools participated and delivered speeches on the said topic.
- **Treasure hunt competition** - Treasure hunt competition was organised on 02.03.2023. A task to hunt for the answers to questions related to exhibits in the science park of the Centre was given to the participants. 97 students from about 20 schools participated in the programme.
- **Launch of New SDL** - A new SDL was launched on 02.03.2023 on the theme 'Fluorescence & Phosphorescence'. 132 students from different colleges attended the programme.
- **Written Science Quiz on "Global Science for Global Wellbeing"** - A written Science Quiz was organised for high school students on 03.03.2023 at 11.00 am. Questions related to the theme "Global Science for Global Wellbeing" were asked in the quiz. 123 students from various schools participated in the quiz.

- **Written Science Quiz for middle school students** - A Written Science Quiz for middle school students was organised on 03.03.2023 at 12.00 noon. Questions related to the theme “General awareness in science” were asked in the quiz. 154 students from various schools participated in the quiz.
- **Power Point Presentation Competition for Teachers** - A PowerPoint Presentation Competition for high school teachers was organised on 04.03.2023. The topic for presentations was “Global Science for Global Wellbeing”. 19 teachers from 19 schools participated and delivered presentations using the MS-PPT tool.
- **Popular Science Lecture** - A popular Science Lecture was organised on 08.03.2023. Dr. Amit Majumdar, former Regional Director, Atomic Mineral Directorate for Exploration and Research, Nagpur delivered lectures and satisfied student’s queries related to Nuclear Energy. 142 students, teachers and parents from various schools attended the lecture.
- **Prize Distribution and Valediction** - A prize distribution and valediction of 13 day long National Science Day & Anniversary Day celebration 2023 was held on 08.03.2023. Dr. Amit Majumdar, former Regional Director, Atomic Mineral Directorate for Exploration and Research, Nagpur was the chief guest for the function. Shri Manoj Kumar Panda, Curator, RSCN was also present on the occasion. The prizes and certificates to winners of all the above competitions were awarded with the hands of guests. The 13 daylong celebration programmes culminated with vote of thanks to Rajiv Gandhi Science & Technology Commission, Govt of Maharashtra, National Council for Science & Technology Communication, DST, Govt. of India, and all those who were directly and indirectly associated with the celebration.
- **Sky Observation Programme** - Daily Sky Observation programmes - 07 Nos. were arranged for visitors. In all 472 visitors viewed the celestial object in the evening sky through a telescope.

Jupiter Venus Conjunction (01.03.2023 & 02.03.2023)

As the two brightest planets; Venus and Jupiter, came close together in the night sky from the Earth’s perspective, the Centre organised a special ‘Astro – Excursion’ programme for the Astro-enthusiasts. In all 243 people viewed this unique event through a Schmidt - Cassegrain telescope.

Bharat Pride - National Science & Industrial Expo - 2023 at Hyderabad

Bharat Pride - National Science & Industrial Expo - 2023 was organized from 09.03.2023 to 12.03.2023 in the campus of Anurag University, Hyderabad. National Council of Science Museums (NCSM) actively participated in this Exhibition through its constituent unit Raman Science Centre Nagpur. The Council had displayed attractive and interactive exhibits in ‘Pride of India’ Exhibition viz: Supplemented Reality, Heart Beat Drum, Visual Gesture Analysis, Life Systems etc. Also, exhibitions on the theme ‘75 years of Independence – India’s Achievements in Science & Technology’ & Indian Women in Science’ were on display along with vibrant Science Corner includes ‘Make and Take’ activities, science puzzles, table-top exhibits demonstrations, soap bubble activities etc. 4150 visitors viewed the NCSM pavilion. Many scientists, eminent persons, students & teachers visited the NCSM pavilion during these 4 days. The NCSM pavilion received the ‘Best Stall’ award.

RSCN - Pratham collaborative event for underprivileged students (11.03.2023 & 12.03.2023)

A Science Activity Camp was conducted for the underprivileged children from rural area of Yawatmal, Chandrapur and Gadchiroli districts on 11.03.2023 & 12.03.2023. The programme was organised in collaboration with Pratham Education Foundation. Visit to Science Park, visit to various exhibition halls, Planetarium show, 3D Science show, Science on a Sphere show, Science Demonstration Lecture on ‘Chemical Reactions’, ‘Fun with Physics’, ‘Matter at Low temperature’, Sky Observation programme and workshop on Aeromodelling, Make and take Science toys etc were conducted during the programme. 40 students and 6 teachers participated in the two days event.

REGIONAL SCIENCE CENTRE BHOPAL

Innovation Hub Programmes

Innovation Hub of the Centre organized 12 Orientation sessions on topics such as Robotics, Trigonometry, Inclinator, Measurement of Air Pressure, Sky Crossbow, Study of Plant Density and Frequency, Salination and Desalination of Water, Centrifugation, Valence Electron, Plasmolysis and Deplasmolysis, Lego Controlled Robotic Claw, Measuring Volume of a Body following Archimedes principle etc. during the period March, 2023. A total of 36 students participated in all these sessions.

Observation of Venus- Jupiter Conjunction

The Centre organized a telescopic observation of the celestial conjunction of Venus and Jupiter on 02.03.2023. On that day, the two bright planets of our night sky approached within the closest distance of half a degree creating a spectacular sight in the sky. Two telescopes of the Centre (a 4" Refracting type and an 8" Schmidt Casagrain type) were employed to visualize the rare celestial event to visitors. In both the telescopes, the two celestial objects were able to be viewed within a single field of view of a 32 mm Eyepiece due to their close proximity which would not have been possible on other days. A Sky Crossbow device was also used to measure the angle between the two planets during the conjunction. A total of 40 highly enthusiastic visitors including students, teachers, parents, children and house-wives watched the rare celestial event through the telescope.

In addition to this, an outreach programme under the titled "Venus, Twin sister of Earth & Jupiter, A Majestic Gas Giant: Conjunction" was organized at Govt. Nehru Higher Secondary School, Narsinghpur on 2nd March, 2023. As a part of the programme, Shri Saket Singh Kaurav, PC, RSC, Bhopal conducted an Interactive session entitled "Cosmic Celestial Drama" amongst the students. Around 80 school students of Middle, High & Higher Secondary level took part in the programme. A number of dignitaries including the Hon'ble Collector of Narsinghpur district and various senior officials from the District Education Office were present during the occasion.

Celebration of International Women's Day-2023

The Centre conducted a series of Interactive and Innovative Workshops to mark the Celebration of International Women's Day on 14.03.2023. As a part of the programme, a Workshop on 'Basic Hematology' was organized wherein Prof Neelkamal Kapoor, Dett. of Pathology, AIIMS, Bhopal joined as a Resource Person and conducted the session. As a part of the programme, a number of Slides on Hematology were prepared which were viewed using the three compound microscopes of the Centre. A total of 68 girl students participated in the programme. In addition to this, a Hands-on Workshop on "Physics Can Be Fun" was also organized wherein the participants developed a working kit on the subject 'Magnetic Field of a Current Carrying Solenoid' with all the raw materials, guidance and support provided to them by this Centre. All the completed kits were given away to the participants for use at home on the completion of the programme. A total of 27 girl students participated in the programme. Further, another Interactive Workshop on 'Applications of Virtual Reality in Science Education' was also organized wherein the participants were given some actual exposure of virtual reality with the VR devices provided by the Centre. A total of 102 girl students including teachers from Govt. Girls College from Vidisha participated in the programme. All the participating students were provided with Certificates of Participation at the end of the Workshop.

Participation of RSC in 38 MP Young Science Congress (YSC) programme at Vidisha

The Centre participated in the 38th MP Young Science Congress organized by MPCST Bhopal at Samrat Ashok Technological Institute (SATI), Vidisha during 17.03.2023 to 19.03.2023. As a part of the programme, a Mobile Science Exhibition on theme 'Energy' , a Panel Exhibition on India's Space Programme, Face to Face Interaction with Expert, Two Hands-on Workshops on 'Telescope Making ' and ' Number Theory : I Can Tell Your Age', Evening Sky Watch programme with Telescope were organized at the site. Besides this, Shri Saket Singh Kaurav, PC, RSC, Bhopal participated in the Face-to-Face with expert's programme as an expert along with Dr. Arvind Ranade, Executive Director, INSA, New Delhi and Prof. Abhirup Dutta, IIT Indore. A total of 2000 visitors participated in the programme including 57 participants in Telescope Making Workshop, 52 participants in Math Workshop, 200 visitors in Evening Sky Watch programme and 75 participants in the 'Face-to-Face with experts' programme.

Celebration of World Water Day:

The Centre observed the World Water Day on 22.03.2023 by organizing a series of programmes for school children. These programmes include: Activities with Water (Activity Sinking & Floating of Bodies in Water, Activity of testing the alkalinity of water with Phenolphthalein Indicator, Blowing of Soap bubbles), Water Quiz and Slogan Drop Box. At the outset, a pledge to conserve water was administered to all the participants by Shri Saket Singh Kaurav, PC, RSC, Bhopal. Prizes were given away to all the successful participants of the Quiz. A total of 400 students participated in the programme.

Inauguration of Gallery and Park Exhibits

A Fun Science Gallery Exhibit entitled 'Particle Trap' and a park exhibit entitled 'Lift the Ball for a Healthy Heart' were opened to the public on 30.03.2023. Prof Chandra Charu Tripathi, Director, NITTTR, Bhopal and Member of Local Advisory Committee of RSC, Bhopal graced the occasion and inaugurated the two exhibits. The exhibit 'Particle Trap' represents a visual demonstration of how a charged particle is trapped and held in a Particle Accelerator using a combination of high electric and magnetic fields. The exhibit 'Lift the Ball for a Healthy Heart' engages a visitor to a simple physical exercise to lift a ball on a stream of air by pedaling a bicycle. The two exhibits were put on display for visitors since then.

Mobile Science Exhibition

The Centre, in collaboration with Rajya Shiksha Kendra, organised Mobile Science Exhibition (MSE) on the topic "How Things Work " in the schools of the district of Mandsaur. Apart from the exhibition, SDL and Science Film shows are also being conducted during the month.

GOA SCIENCE CENTRE & PLANETARIUM, PANAJI

Jupiter –Venus Conjunction

The Centre made a special arrangement to observe rare celestial event i.e., Conjunction of Jupiter and Venus on 01.03.2023 & 02.03.2023 for the students, teachers and general public. Around 369 students, teachers and general public witness the event. Also, the Jupiter - Venus Conjunction observation programme was arranged during Mobile Science Exhibition at Digas Madhyamik Vidyalaya, Digas, Tahsil Kudal, Dist. Sindhudurg, Maharashtra in which total 136 witness the event.

STEM- Creative Science Camp

The Centre in collaboration with Pratham Education Foundation organized two days STEM creative learning workshop on 04.03.2023 & 05.03.2023 for the remote areas students of Kolhapur, Satara and Sangli districts of Maharashtra. During two days the students were involved in various hands-on workshop like aeromodelling, water rocket, star dial making. Also, demonstration on liquid nitrogen, sky observation was organized during the program. For two days total 103 students attended the science camp.

Outreach Activity

The Centre participated in Scientistica 3.0 program organized by St. Theresa High School, Sto Estevem on 07.03.2023. As a part of the program science demonstration lecture on topic Science Vs Miracle was organized for school students. Total 563 students, teachers and parents attended the program.

World Water Day

The Centre in collaboration with National Centre for Polar & Ocean Research organized Spot quiz on topic water to create awareness about water conservation on 22.03.2023 in which 10 spot prizes were also awarded to the visitors of the Centre. Also Painting & Poster Designing competition was organized on 23.03.2023 for children followed by Film show. Chief Guest of the function Dr. Thamban Meloth, Director, National Centre for Polar & Ocean Research, Vasco gave away the prizes.

Mobile Science Exhibition

The Centre organized Mobile Science Exhibition in Sindhudurg District of Maharashtra wherein the bus visited 08 schools in the month of March. Apart from science exhibition various other programs such as science demonstration, science film show and sky observation were organized in schools.

Astro Night Tourism

The Centre organized sky observation program for the tourist as a part of Astro-Night Tourism at Miramar beach of Goa on 27.03.2023 & 28.03.2023. During the program the tourist were astonished to see Crescent Moon with craters, Venus and mars and open star cluster Pleiades. Total 1635 tourist witness the event.

DISTRICT SCIENCE CENTRE, DHARAMPUR

Annual Science Quiz Competition

On 02.03.2023 and 03.03.2023, the Centre organized the annual science quiz in collaboration with DIET. A total of 27 schools participated in the competition. A total of 13 rounds of quizzes were held.

Stem Teacher's Training

STEM CELL hands on training workshop held on 01.03.2023 to 03.03.2023 at the Centre in collaboration with District Institute of Education and Training, Valsad. 50 teachers from Valsad district had participated.

Creativity Camp for Science

The creativity camp for science was held on 04.03.2023 at the Centre for students of Primary School Kakadmati in collaboration with Pratham Education Foundation and. 30 students and 6 teachers took a part in this camp. The motive of the camp was science awareness for students. All the students participated in hands on activities in different areas of science such as Mathematics, Physics, Biology, Chemistry and Astronomy etc. Activities like geometrical pyramid, bird in a cage, magnetic field, sound implication, preparation of onion slide and its microscopic view, art and craft frog, star wheel, robotics, experiment of magnesium metal turns into magnesium oxide, nitrogen show etc. was conducted during programme.

Mobile Science Exhibition

Curriculum based Mobile Science Exhibition was organized by the Centre from 01.03.2023 to 11.03.2023. Total 07 school sites of Valsad District covered during the month. Total 3994 visitors visited the Mobile Science Exhibition.

π Day Celebration

On 14th of March π day celebration held at the Centre. 115 students of Vidhyamandir Sherimal School, Dharampur and 50 teachers of Valsad district participate in the celebration. All the students and teachers participated in hands on activity like value of π .

Sports Integrated Education Toy Integrated Education Workshop

On 14.03.2023 and 15.03.2023 Sports integrated education toy integrated education workshop held at the Centre in collaboration with DIET Valsad. Total 50 teachers of Valsad district participated. The motive of the program was understanding of the principles of the science so that science can be learned through play. Hands on activity like Newton's law in cricket, kinetic energy, sound wave through paper cup, speed of planets, stars identification by star wheel, area of circle and area of rectangle is equal such activities were covered in the training program.

Innovation Fest 2023

Innovation Fest 2023 was Organized by Innovation Hub, District Science Centre, Dharampur in association with Bayer Vapi Pvt. Ltd. from 17.03.23 to 19.03.23. Total 3 days event was organized in which it covered Science, Technical and Robotics background Events. 12 competitions were held from overall Events. The chief guest of the event Shri Narendra Shah and Guest of Honor Shri Shailendra Vispute inaugurated the Event on 17.03.2023. On 18.03.23 an expert lecture was organized on topic Industrial Patent Development and Basics of Patent by Dr. Swapnil Yerande, Head-AIMI-Asia Pacific for the participants, coordinator, staff members and visitors. On day 3 Robotics competition was held i.e. Robo War, Robo Race, Robo Soccer, Hurdle Race. The chief guest and guest of honor for valedictory function were Dr. Sudarshan Iyengar former vice chancellor Gujarat Vidyapeeth. and Dr. Indra Vats curator Lady Wilson Museum. Total 350 students participated in the overall event of 3-days.

Astro Night Tourism – Sky Observation Program

Astro Night Tourism Sky observing programme was organized in Vapi on 24.03.23. 200 members of Vapi Engineers Association participated in the programme. Moon, Venus, Mars and Messier 42,45 were observed through the telescope and other constellations and zodiac signs were identified during the programme. A sky observation programme was organised at Dakshina Vidyalaya in Umargam on 25.03.23. 150 students and general visitors participated in the programme. Moon, Venus, Mars and Messier 42,45 were observed through the telescope and other constellations and zodiac signs were identified during the programme.

MSE Tour

Curriculum based Mobile Science Exhibition was organized by the Centre from 24.03.2023 to 25.03.2023 at Vapi. 200 members of Engineering association of Vapi and 150 students and general visitors participated in the programme.

Astro Night Tourism – Sky Observation Program

On 27.03.2023 and 20.03.2023 a programme of sky observation was organized in the Centre. 100 students of Prathmik Vidhyamandir, Jespor and general visitors participated in the programme. Moon, Venus, Mars and Messier 42, 45 were observed through the telescope and other constellations and zodiac signs were identified during the programme. On 28.03.2023, about 30 general visitors observed the rare celestial event in which the Moon, Venus and Mars were observed through the telescope.