



MUKTANGAN **EXPLORATORY**



2024-25

ANNUAL REPORT

**by BVB's Muktangan Exploratory
Science Centre for School Children
and Underprivileged Students**

Bharatiya Vidya Bhavan's

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Vision & Mission

Exploratory is a place where children can explore and experiment, design and fabricate, invent & innovate. Exploratory launches students on an unending path of Exploration



Late Dr. V. G. Bhide (Founder)

Centenary Year Celebration

Muktangan Exploratory is celebrating this year 2024-25 as birth centenary year of our beloved founder Lt. Dr. V. G. Bhide.

MUKTANGAN EXPLORATORY

Muktangan Exploratory Science Centre (MESCC) a unit of Bharatiya Vidya Bhavan is a distinctive Science Centre perhaps the only one of its kind in the country, which aspires to stimulate curiosity and arouse science learning in all age groups – students, teachers and community in general. The Centre values science as an indispensable tool for understanding the world around and enriching people's lives. Children from various schools are encouraged to experience science by performing experiments and activities besides formal learning. Here the children learn to explore and experiment, invent and innovate. The Centre is working ceaselessly over two and half decades, to generate inquisitiveness, develop scientific attitude and temperament in children.



LANDMARKS IN HISTORY OF MESCC

- Establishment of Exploratory on 8 April 1992 at Bharatiya Vidya Bhavan, Pune Kendra campus.
- Inauguration of new building of Exploratory – 2 Oct 2006.
- Winning Indian Merchant Chamber's (IMC) Mumbai award – 2006 for popularizing science education.
- Launching of Young Explorer Project Competition – Feb 2007.
- Introduction of new Earth Science Lab – 5 June 2008.
- Establishment of New Sub-Centre at Kothrud – 9 June 2008.
- Establishment of New Sub-Centre at Jnana Prabodhini Navnagar Vidyalaya, Nigdi Campus -1 August 2012.
- Centre received the prestigious - NATIONAL AWARD FOR OUTSTANDING EFFORTS IN SCIENCE & TECHNOLOGY POPULARIZATION AMONG CHILDREN for the year 2014 by National Council for Science & Technology Communication, (NCSTC) Dept. of Science & Technology, Govt. of India, Ministry of Science & Technology, New Delhi.

REPRESENTATION OF EXPLORATORY

- Participation in National Children Science Congress at MIT college campus, Pune – 2001.
- Participation in NCSM (National Council of Science Museum) Brainstorming session at Mumbai about future course in dissemination of science in 12 Five Year Plan - Feb. 2011
- Participation in workshop on "Scheme for Promoting Innovation, Creativity and Engagement in Science" (SPICES) organized by National Science Centre, New Delhi- 11th March 2014
- Participation at the Program 'Policy for Science and Science for Policies' conducted by National Institute of Advanced Studies (NIAS), Bangalore - 19 November 2015th
- Participation in 8th National Teachers' Science Congress (NTSC), organized by Marathi Vidnyan Parishad, Mumbai at IISER, Pune - 16 to 19 December 2015



Summary of Activities – 2024-25

Throughout the year, BVB's Mukhtangan Exploratory Science Centre has conducted a diverse range of educational programs, workshops, events, and competitions aimed at fostering scientific curiosity among school children under its Science centre and Innovation Hub. Special emphasis was placed on benefiting underprivileged students through the FreeShip initiative, ensuring inclusive learning opportunities.

SCIENCE CENTRE PROGRAMS

LONG DURATION WORKSHOPS

REGULAR COURSE

(Science through experiments)

Around 953 students enrolled during academic year 2024-25 for Regular course "Science through Experiments". In this program students performed experiments in Physics I, Physics II, Chemistry, Biology, Mathematics, Earth Science labs and learned the concepts from these subjects in effective manner. out of these 250 students were under privileged. These students were sponsored by **Weikfield Foundation** and **Dada Deshpande** Trust.



GUIDANCE FOR HOMI BHABHA PROGRAM



Mukhtangan exploratory provided guidance for Theory, Practical, Project round of Prestigious Homi Bhabha Young Scientist exam. This year Training for Theory was imparted to 65 students from 6th & 9th std. The guidance for Practicals was given to around 160 students from Pune as well as outstation students.

Our students -Master Tejas Bhong & Master Samyak Sankpal received Silver medal in Homi Bhabha Young Scientist exam.



CREATIVE SCIENCE PROGRAM FOR STD 3RD & 4TH STUDENTS

An yearly Program for fun filled Science activities for kids was attended by 38 students.



SUMMER WORKSHOP

(For students selected through our Science Talent Search Exam)



An Exciting weeklong Summer Science Workshop was organized for 77 students who cleared our STS exam. These students were exposed to hands on Experimentation in our labs and they also interacted with eminent Scientists.

PRACTICAL WORKSHOP FOR Std 10th

Workshop for Science Practicals for 10th std was organized for 85 students.



SCIENCE WORKSHOP FOR UNDERPRIVILAGED STUDENTS (Sponsored)

A Science Workshop to learn science through activities & experiments was organized for 50 students of Sant Ramdas School , Wadarwadi under the sponsorship from Yardi Software Systems between December – February. Total 14 sessions were conducted at the school.



SHORT DURATION WORKSHOPS

A variety of unique exciting workshops were conducted by Muktangan Exploratory in vacation / weekend periods. These include-

- **Fun with Science**
- **Wonders of Physics**
- **Origami Workshop**
- **World under Microscope**
- **Geo Science Workshop**
- **Chemmagica**
- **Mathemagic Workshop**
- **Science Film Making**
- **Creative Electronics**
- **Science Workshop for IITPK students**



ANNUAL MEGA EVENTS

INTERSCHOOL SCIENCE POSTER MAKING COMPETITION

An Interschool Poster making competition was organized on 21st August 2024 to mark the Centenary year celebration programs. The topic for posters were- Evolution (Human/ nature /Technology), Astronomy & Space, Optical Illusion, Symmetry in Nature. We received a huge response for this competition. 248 students from different schools participated in it.



INTERSCHOOL SCIENCE ESSAY COMPETITION

(For School Students -Teachers)

An Interschool Science essay competition was organized in various schools of Pune. The topic for students was “Imagine a Day without Technology”. The topic for teachers was “Use of AI in teaching”

Total essays received: 700 students + 20 teachers category. Out of which 55 students + 8 teachers were shortlisted for interview round. Interview round and Prize distribution function was held on 20th December 2024.



SCI TALK' LECTURE SERIES (18th to 21st December 2024)

To mark the birth centenary year of Founder Dr. V. G. Bhide we organized Sci - Talk lecture series on cutting edge Science & Technology topics between 18th December - 21st December 2024 for students and general public.

The lectures and the topics were -

- “Aditya L1 a multi modal Solar Observatory”
by **Dr. Bhas Bapat , IISER Pune**
- “Challenges of Modern Science”
by **Dr. Shekhar Mande, Former Director General CSIR**
- “What do we learn from Nature”
by **Dr. Arvind Natu, Chairman Board of Governors IISER**
- “Partnership between Human Intelligence & Artificial Intelligence”
by **Dr. Vivek Sawant , Chief Mentor MKCL**



INTER SCHOOL YOUNG EXPLORER PROJECT COMPETITIONS

Students from various schools made innovative Science & Technology projects. Around 65 projects were shortlisted for Mega Exhibition on 18th & 19th January. A large number of visitors visited the exhibition. The event was sponsored by Poona Couplings Pvt. Ltd.



SCIENCE TALENT SEARCH EXAM (8th February- 16th February)

This exam was conducted through various schools of Pune for selection of students in our Summer Science Workshop.

SCIENCE CARNIVAL (28th February & 1st March 2025)

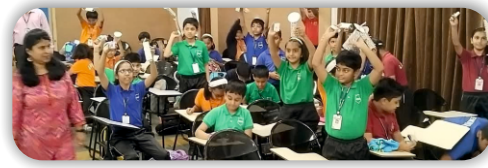
An exciting Science Carnival was organized to celebrate National Science Day. Exciting demos, Science Park models, Science Exhibits were part of the exhibition. Around 1000 students and parents visited the exhibition.



OTHER PROGRAM

A DAY WITH EXPLORATORY

Around 598 students visited for this program from different schools e.g.- Clara Global, VPMS Lohegaon, Bharatiya Jain Sangathana, Lexicon Intl School, Sadhu Waswani Intl School, Pandit Rao Agashe School, Akshar Nandan School thought out the year.



TEACHER TRAINING PROGRAMS

Through out the year total 8 Teacher Training programs in activity based teaching were conducted. These training programs were conducted for NCL Out Reach, St. Anthony School , Urja Gurukul School , Pune Knowledge Cluster



SCIENCE LAB SET UP

Muktangan Exploratory helped to established Science Labs in St. Anthony School & Urja Gurukul School, Ahmednagar. Apart from lab set up, Teacher Training Programs were provided to teachers at these places.

ONE DAY SCIENCE EVENT

A one day Science event was organized for 40 employees of Ansys Software System. This included exciting demos, interesting hands-on activities and a unique Geo Bollywood show.

**The academic year was full of activity and programs.
A total of 4290 students participated in various
programs conducted by the Centre.**



INNOVATION HUB PROGRAMS

LONG DURATION PROGRAMS

STEM Design Skill Development Program (Sponsored by Dassault Systems)

The program includes 2D and 3D designing using soft-wares, working with Laser cutter, 3D printer and vinyl cutter. It is 12 sessions (2 hrs each) program sponsored for under privileged girl students.

100 girls from different schools (P.E.S. Modern Girls Highschool, Kilbil Highschool & Nu. Ma. Vi. Girls high school) benefitted.



Technician Skill Development Program (Sponsored by Dassault Systems)

The program included basic carpentry, plumbing, electrical system and bicycle repair. It is 12 sessions (2 hrs each) program sponsored for under privileged students.

100 students from different schools (P.E.S. Modern Girls Highschool, Darode School, Modern School Ganeshkhind) benefitted with this program.



Introduction to basic Architecture and Interior Design Program (Sponsored by Dassault Systems)

The program included virtual design of rooms, adding floor, stairs, furniture, designing articles using soft-ware, 3D Printer.

The program comprised of 10 sessions (2 hrs each). The program was sponsored for 100 under privileged girls. 28 girls from Mahilashram Highschool completed the course and were awarded with certificates. The next phase will be executed in March and April with 32 girls of Nu. Ma. Vi. Girls high school.



Design Skill Development Program (Sponsored by Ansys Software Pvt. Ltd.)

The program included 2D and 3D designing using soft-wares, working with Laser cutter and 3D printer. It was 10 sessions (2 hrs each) program sponsored for under privileged girl students. 34 girls from Mahesh Vidyalay benefitted



Hackathon- Skills + Creativity Competition (Sponsored by Dassault Systems)

Hackathon Competition for the students who have completed STEM Design Skill Development and Technician Skill Development Program was organized.

In the first phase, 20 students participated and 6 projects were exhibited. The second phase will be conducted in the month of April.



Seed The Future Entrepreneur Program (Sponsored by Dassault Systems in association with Niti Aayog and ATL Innovation Mission)

National level competition in which students undergo the complete Design Thinking Process, make prototype, product pitch, marketing video and present the product to the juries. The program is yearlong and final will be conducted in June 2025, 8 students from BVB's Sulochana Natu Vidya Mandir are participating under the guidance of two teachers



Project Based Learning Program (Sponsored by Dassault Systems)

Working on a specific problem, ideation, design, prototype and testing. It is 10 sessions (2 Hrs each) program and 50 students participated.

PROGRAMS FOR PAID STUDENTS

Electronics Club

Includes electronic components, symbols, simple circuits, use of breadboard, soldering and project. 6 sessions (90 min each) program conducted twice and 6 students participated



Lego Robotics

Conducted by Cyan Oriole. It includes STEAM education, mechanics, electronics, constructing robot using Lego blocks, block coding



Short duration programs (Workshops)

1. **Ganapati Decoration Workshop**

Flashing LED lights using electronic circuit. 12 students participated

2. **Lantern making workshop**

Paper and MDF lantern using laser cutter. 5 students participated

3. **Basic Carpentry workshop**

Handling tools and machines, measurements, cutting, fixing and polishing. 14 students participated

4. **Basic Plumbing workshop**

Plumbing system, types of joints, valves, connecting pipes, water fountain using submersible motor. 8 students participated

5. **Basic Electrical Workshop**

Electrical connections, handling tools, safety precautions, series and parallel connections, electrical board. 10 students participated

6. **Bicycle Dissection workshop**

Dismantling a bicycle, taking apart the wheel, tire and tube, fixing and repairing puncture, removing and fixing chain, oiling, reassembling the parts. 9 students participated

7. **Robotics for Kids workshop**

Remote controlled paper robot using BO motor. 9 students participated

8. **Basic electronics workshop**

Basic components and symbols, Working with breadboard, soldering. 9 students participated

9. **T-shirt printing workshop**

Select image/text, cut on vinyl paper and transfer on T-shirt. 7 students participated

10. **Fab machine course**

Working with Laser cutter, 3D printer, design software, creating 2D/3D designs, operating machines. 4 students participated



Impact on Underprivileged Students (Freeship Beneficiaries)

The Freeship initiative ensured that 350 students from economically weaker backgrounds could participate in long-term science educational programs and another 800 deserving underprivileged students could participate in skill development programs without financial constraints. Additionally, these students benefited from various workshops and events designed to enhance their scientific knowledge and practical skills.

Acknowledgment of Our Esteemed Sponsors and Donors

We express our deepest gratitude to our valued sponsors and donors for their unwavering support in shaping the journey of Mukhtangan Exploratory Science Centre. Your generosity has been instrumental in fostering scientific curiosity, innovation, and hands-on learning for countless students and educators.

A special thanks to **Smt. Chitra Bujruk, Weikfield Foundation, Dassault Systèmes, Ansys Software Pvt. Ltd., Brembo Brake Pvt. Ltd., Yardi Software India Pvt. Ltd., Greater Software Pvt. Ltd., and Poona Coupling Pvt. Ltd.** for their significant contributions. Your support has enabled us to enhance our programs, upgrade our facilities, and continue inspiring young minds in the field of STEM education.

We also extend our heartfelt appreciation to **Mr. Dada Deshpande**, whose personal donation has been a cornerstone in building the Exploratory from almost its inception. His generosity and vision have played a vital role in making this institution what it is today.

Your commitment to education and innovation empowers us to create a brighter future for generations to come. We look forward to continuing this meaningful partnership.

Thank you for making a lasting impact!

Conclusion

The year's activities demonstrated a strong commitment to promoting STEM education among school children, with a significant focus on reaching underprivileged students. By engaging thousands of students through structured programs, hands-on workshops, and competitions, the Mukhtangan Exploratory Science Centre continues to foster scientific curiosity and skill development among the younger generation.

Future program : 2025-26

SCIENCE CENTRE PROGRAMS

LONG DURATION WORKSHOPS

1. REGULAR COURSE (Science through experiments)
2. GUIDANCE FOR HOMI BHABHA PROGRAM
3. CREATIVE SCIENCE PROGRAM FOR STD 3RD & 4TH STUDENTS -
4. SUMMER WORKSHOP (For students selected through our Science Talent Search Exam)
5. PRACTICAL WORKSHOP FOR Std 10th SCIENCE WORKSHOP FOR UNDERPRIVILEGED STUDENTS (Sponsored)

SHORT DURATION WORKSHOPS

A variety of unique exciting workshops will be conducted by Mukhtangan Exploratory in vacation / weekend periods. These include-

1. Fun with Science
2. Wonders of Physics
3. Origami Workshop
4. World under Microscope
5. Geo Science Workshop
6. Chemmagica
7. Mathemagic Workshop
8. Creative Electronics
9. Water Lab – Science in every drop
10. Joy of Science
11. Science Workshop for IITPK students (13)

ANNUAL MEGA EVENTS

1. Interschool Science Poster Making Competition.
2. Interschool Science Essay Competition.
3. SciTalk' Lecture Series.
4. Interschool Young Explorer Project Competitions.
5. Science Talent Search Exam.
6. Science Carnival.

OTHER PROGRAMS

1. A Day With Exploratory.
2. Teacher Training Programs.
3. Science Lab set up.

INNOVATION HUB PROGRAMS

Long duration programs (Sponsored)

1. STEM Design Skill Development Program.
2. Technician Skill Development Program.
3. Introduction to basic Architecture and Interior Design Program.
4. Design Skill Development Program.
5. Hackathon- Skills + Creativity Competition.
6. Project Based Learning Program.
7. Electronics Club.
8. Lego Robotics.

Long duration Program (Sponsored)

- | | |
|----------------------------------|---------------------------------|
| 1. Ganapati Decoration Workshop. | 6. Bicycle Dissection workshop. |
| 2. Lantern making workshop. | 7. Robotics for Kids workshop. |
| 3. Basic Carpentry workshop. | 8. Basic electronics workshop. |
| 4. Basic Plumbing workshop. | 9. T-shirt printing workshop. |
| 5. Basic Electrical Workshop. | 10. Fab machine course. |

Focus areas

1. AI (Artificial Intelligence)
2. ML (Machine Learning)
3. Drones

APPEAL

Exploratory is run purely on public support. We firmly believe that such novel and innovative approaches to science education should not only be supported by the society, at large but should also own them. We appeal to everyone, the corporate, the philanthropic organizations to lend a helping hand to strengthen and sustain this institution.

Any donation to Bharatiya Vidya Bhavan entitles donor 100% income tax rebate under section 80G (2)(a)(iii) as per Income Tax Act 1960. We have the permissions to receive the donations in foreign currencies. The donation cheques should be in favour of "Bharatiya Vidya Bhavan" along with a letter indicating that the proceeds be used for the Mukhtangan Exploratory Science Centre. We request you to join us in this noble cause by generously giving a donation. We are looking forward for a positive response and help from you.

Bharatiya Vidya Bhavan's Pune Kendra committee Member

Smt. Leena Mehendale IAS (Retd.)	: CHAIR PERSON
Smt. Vijayam Kartha	: VICE- CHAIR PERSON
Prof. Nandkumar Kakirde	: DIRECTOR & HON. SECRETARY

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Dr. A. L. Deshmukh	Shri. Vivek Velankar
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Shri. P.M. Madkaikar	Shri. Ramesh Kumar



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