

The Joy of Science



Annual Report

2023-24



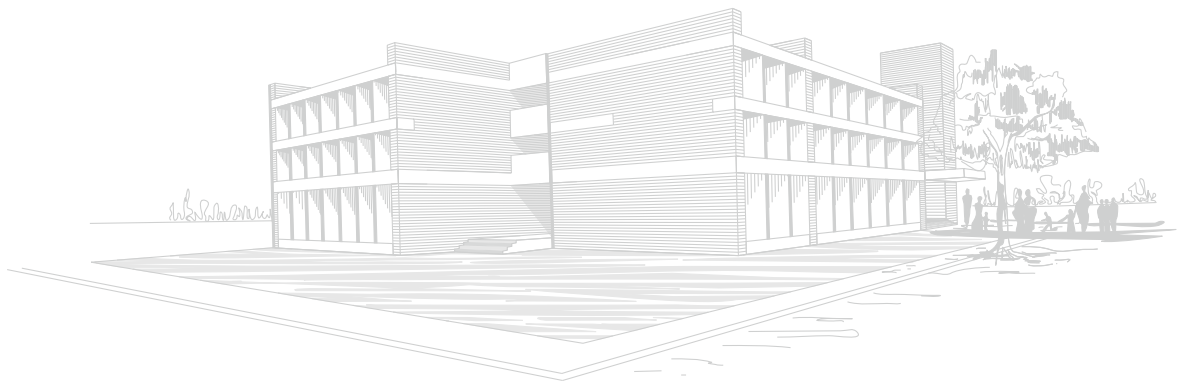
**VIKRAM A SARABHAI
COMMUNITY SCIENCE CENTRE**

The Joy of Science

Innovative Programmes and Material for Science Education

Annual Report

2023-24



**VIKRAM A SARABHAI
COMMUNITY SCIENCE CENTRE**

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Chairman's Message



It gives me great satisfaction and pride to hear about the progress made by Vikram A Sarabhai Community Science Centre (VASCSC), a pioneering institution established by the visionary Dr. Vikram Sarabhai. The vision of this 58-year-old organization remains crystal clear, even as it adapts and evolves in context of the changing scenario of the education ecosystem in the country. I see that VASCSC's programmes encompass the latest trends in science education; still adhering to its mandate of promoting understanding of fundamental scientific concepts, encouraging process of inquiry, stimulating interest, improving quality of science education and making clear the role of science in society.

The continuous advancements in science and technology are set to create numerous STEM-related jobs in the coming years. A robust foundation in these subjects is crucial for students to be future-ready. STEM education fosters out-of-the-box thinking and encourages children to apply their knowledge to devise creative solutions to real-world problems. In recent years, VASCSC has strategically focused on promoting emerging technologies for STEM learning. Early exposure to these technologies can inspire students to pursue careers in STEM fields. With its multifarious activities, the Centre has paved its way as a leading organization in promoting STEM education and innovation.

The NEP 2020 supports a comprehensive approach to education that ensures every student, regardless of their background, has the opportunity to engage with and excel in STEM fields. VASCSC has made dedicated efforts for including children from under-represented groups, in their regular programmes. The huge participation and popularity of these programmes brings our attention to greater need of such initiatives. I believe that by fostering a diverse and inclusive environment, all children have the chance to contribute to scientific and technological advancements. This approach not only enriches the learning experience but also helps build a more equitable society where everyone can thrive.

The School STEM Labs set up by VASCSC are providing students with the much-needed practical, hands-on experiences that bring theoretical concepts to life. By working in these labs, students are encouraged to experiment, explore, and innovate; along with acquiring 21st century skills such as critical thinking, collaboration, problem-solving, and independent learning. It is great to know about VASCSC's ambition to set up many more STEM labs in schools catering to those with limited access.

Capacity building of science and mathematics teachers is a core strength of the Centre; as it facilitates them for integration of hands-on methodology in their day-to-day teaching. This has enabled teachers to incorporate interactive teaching learning process which encourages inquiry, exploration and experiential learning. This methodology, accompanied with the innovative TLM, helps in concrete visualization of abstract concepts and enrich the learning experience of students. Hands-on workshops are also being conducted for pre-service teachers, who are preparing to enter the teaching profession. This is a wonderful initiative to provide them with a strong foundation for effective STEM teaching.

VASCSC can contribute to the STEM education ecosystem at national-level, with its expertise and experience. Although there is documented evidence of successful STEM education initiatives in the past at national-level, there is need for more such efforts. The CSR supported projects implemented by VASCSC are showing good outcomes. Documentation of such programme outcomes is a contributory resource in the replication and scaling up process. Possibilities of further collaborations with CSR partners should be explored in a way that VASCSC's rich experience can be put to greater use. At the same time, these collaborations are important for sustainability of Centre's programmes.

I would like to compliment the Director and the team VASCSC for their excellent work. The valuable guidance of Shri Kartikeya Sarabhai and the Board Members is specially appreciated. I would also like to thank the donors, project partners, students, teachers and well-wishers for their consistent support to the Centre. My best wishes to everyone for future endeavors.

A handwritten signature in blue ink, consisting of a large, stylized loop followed by a horizontal line that tapers off to the right.

Dr. K. Kasturirangan
Chairman
Board of Governors, VASCSC

From the Director's Desk



It gives me immense pleasure to present the work of our Centre during the year 2023-24 through this Annual Report. With our strong commitment to promoting STEM education, we carried out our regular programmes with the same zeal as the newly initiated activities. We are proud to inform that the Centre received the Mahatma Award for Social Good and Impact this year, in recognition of our efforts.

This was a year of growth for us as we not only reached out to more people, but also grew our capacities in terms of upgraded infrastructure and lab facilities. This has been possible through our CSR partners who have placed their trust in our work and provided the much-needed support for our programmes and activities.

VASCSC successfully set up and functionalized 23 WAAH Community Science Centres across Gujarat, under the partnership with WAAH Foundation. These Centres are serving as STEM tinkering laboratories where children can independently perform activities, experiments and use scientific gadgets and equipment. This will not only lead to deeper and lasting understanding of the STEM concepts but also reinforce the design thinking, creative, and experimental capacities of children. WAAH Science Laureate Awards, currently in their third edition, are helping us to recognize the work of researchers which is benefiting the society. We also built a new hall for STEM activities at the Centre under this partnership.

Our partnership with TIPL has enabled us to not only reach out but also provided key support to our core programmes and upgradation of facilities. Some latest scientific equipment procured under this support included a flight simulator, laser engraver machine, robotics and AI kits, neuroscience kit, micro:bit, amongst many others; which are enabling us to provide students with enriching STEM experiences. Similarly with support from Kostwein India, we made in-roads in capacity building of preservice teachers. As part of our new partnership with L&T CSR, we conducted regional STEM Fest events in Surat, Vadodara and Chennai, which finally culminated in National STEM Challenge in Mumbai. We got the opportunity to take the joy of STEM to over 3500 underprivileged children from the selected schools under the project. Regional event winners competed in the national event to win prizes such as drones, robotics kits, telescopes, which will empower them to further explore and create.

An important USP of our all our programmes is accessibility and inclusivity. Under our partnership with EY Foundation, we conducted outreach programme focused on making STEM accessible for girl students. At the same time, we conducted training workshops for teachers catering to underprivileged girl students in Ladakh. With Intel's support, we conducted hands-on STEM workshops for underrepresented student groups such as girls, intellectually challenged, differently abled, minority, and those from remote, tribal and rural locations. In collaboration with KHS, we conducted the intensive 'Science School' programme for children from govt. schools and set-up Space Club in Anand, so that students could have access to space education resource. In the same league, we conducted Astronomy workshops for children from Vadodara, Surat and Ahmedabad in collaboration with AIF.

Our core programmes such as School Science Forum, Summer Programme, School Project and Practicals, and Science Outdoors were conducted successfully, with huge participation of students. Our Science Shop products are reaching all parts of the country. We are happy that our TLM is widely used and appreciated by schools and organizations working in STEM education; and we have been receiving orders from private and govt. schools alike. To keep up with the demand, we increased our production and added more products to our catalogue.

I would like to extend my heartfelt gratitude to Dr. Kasturirangan, Chairman of VASCSC Board and all the Board Members for their invaluable support and continued guidance. I appreciate the efforts of my team members at VASCSC in continuing the Centre's programmes and projects. Most of all I am thankful to all our well-wishers, donors, project partners, teachers and students for encouraging us with their participation in our activities.

Dilip Surkar
Executive Director, VASCSC

Vikram A Sarabhai Community Science Centre (VASCSC) is a pioneering Community Science Centre, founded in 1966 by India's renowned scientist, Dr. Vikram A. Sarabhai to encourage scientific thinking and innovative science teaching. VASCSC started as a facility where people concerned about quality of science education could come together to try out new ideas and methods for teaching Science. It originated as 'Group for Improvement of Science Education (GISE)' in 1963 from PRL, Ahmedabad. It was initially called as 'Community Science Centre' but after Dr. Sarabhai's demise in 1971, it was renamed as 'Vikram A Sarabhai Community Science Centre', to associate its name with its Founder.

VASCSC's mandate is to promote among students, teachers and public an understanding of fundamental concepts involved in Science Education; the acquisition of scientific knowledge, insights as far as possible by the process of inquiry through experiment, audio-visual media and other means; the ability to solve problems; to stimulate interest in the principles of science and scientific method among students, by giving them the necessary encouragement and exposure; to be concerned with the role of education and ways of improving science education, in relation to the individual and the community as a whole; and to help make clear the social implications of science and technology.

The core of its philosophy is to take school and college students out of the rigid framework of textbooks and encourage them to think, explore and create. Over the years, the Centre has combined formal and non-formal techniques of education to formulate many innovative methods to give students a better understanding of

science and mathematics and make the process of learning enjoyable and long-lasting.

VASCSC has pioneered concepts such as interactive exhibition space, open laboratories, Mathematics Laboratory, Science Playground, use of computers in science education and developing interactive educational programmes. Most of these are part of mainstream today. Centre's focus on spreading the joy of science by reaching out to different segments of the community is illustrated by its logo. The five arrowheads in the logo represent groups viz. teachers, students, researchers, administrators & community while VASCSC is represented by ' Δ ', the mathematical symbol for change. VASCSC aims to bring about change by providing a common platform to all these groups.



The Centre houses well-equipped laboratories in Biology, Chemistry, Physics, Electronics, Model Rocketry, Astronomy, Innovation, Mathematics, Computer; Science Playground; Library; Workshop and Science Shop. The Centre's efforts for improving the quality of science education and popularization have been recognized through awards including:

- National Award for 'Outstanding Efforts in Science & Technology Communication' by Dept. of Science & Technology, Govt. of India in 2008
- The 'Times of India Social Impact Award' for Education in 2011
- Mahatma Award for Social Good & Impact by Mahatma Foundation in 2023.



The Annual Programme is conducted throughout the year, with the objective to develop interest and nurture children's curiosity towards science. Here, STEM concepts are transacted in a simple and engaging manner. The role of science in daily life is also highlighted to show its relevance. Science concepts are explained using methodologies like demonstrations, experiments, projects, science shows, hands-on activities, film shows, etc.

Open House

Under the Open House programme, visitor groups can explore Centre's facilities and gain joyful exposure to different science topics. This includes the well-equipped laboratories, interactive exhibits, library, etc. which can be accessed by the visitors.

School Visits

The School Visit programme is conducted for school groups visiting the Centre, where the fun facet of science is presented to the children in order to develop their interest. This programme is facilitated by a dedicated team. Specially designed sessions are conducted for the groups including Science Show, demonstrations, experiments, hands-on and group activities, games, innovative TLM, orientation to Centre's facilities, etc.

School Visits aim to develop students' inclination and liking for science. This is the first step towards encouraging them to explore various aspects of these subjects and eventually develop better conceptual understanding. The students are also introduced to the activities of the Centre and encouraged to participate in

the regular programmes. Takeaway material is provided to children and their schools, as and when possible. Visit to VASCSC is an integral part of their educational trips for many schools. Many students who visit the Centre as part of their school group, visit again on their own and several of them start participating in the Centre's activities regularly. Similarly, schools also participate in events or other activities of the Centre, following their visit to VASCSC.

5438 students, and 291 teachers from 53 schools participated in the activity during the year. This comprised school groups from Ahmedabad as well as other places. The students belonged to different grades starting from pre-school to higher secondary. Many college and educational institution groups also visited the Centre and they were engaged in interactive sessions according to their level.

Student Visits

The Centre's laboratories are well-equipped for conducting school-level practicals. School students make use of the lab facilities to perform science experiments requisite in school or to try out their new ideas. This is categorized as Student Visits where students visit the labs individually to perform science practicals and investigatory projects. The necessary equipment, material and guidance are provided to students for their school projects, science fair projects and for trying out innovative ideas. The facilitation is provided by the Centre's educators.

2794 students from different schools performed practicals and projects in the Centre's labs.



The School Science Forum (SSF) is a year-long, curriculum-based programme, offered for students of Std. 5-9. During the reporting year, 903 participants from different schools were enrolled. Most of these students have been enrolling during successive years, as they had benefited from hands-on learning gained from the programme in previous years.

This programme was initiated as an intervention to provide children with hands-on experience for developing conceptual understanding and interest. These are formative years which determine a child's interest and aptitude for science. The right intervention during these formative years may motivate them for pursuing higher studies and careers in science. SSF started in 2011, and since then it has received consistent participation, and is one of the most sought-after programmes among children.

The programme content is based on the school curriculum. The students get practical exposure to topics they learn at school and also receive continuous guidance over the year. This contributes to developing long-lasting understanding of difficult topics in science and mathematics, thereby helping them in school studies. SSF provides participants with the opportunity

to explore deeper and develop positive attitude towards science and mathematics.

The SSF sessions were conducted in different labs by the trained team. For each standard, around 30 sessions of two hours each, were conducted weekly. Currently 46 batches are being offered across various standards. To strengthen the understanding of basic concepts, topics from Biology, Chemistry, Computers, Mathematics, Physics, Electronics, Astronomy, Model Rocketry, etc. were covered. The activities were designed in such a way that it not only helped to understand the topics, but also to develop critical thinking & problem-solving skills.

The admissions process for academic year 2024-25 was also initiated and students enrolled for the programme beforehand.

Day	No. of Batches of SSF				
	Std. 5	Std. 6	Std. 7	Std. 8	Std. 9
Tue	2	2	2	2	-
Wed	1	1	1	1	1
Thu	2	2	2	2	1
Fri	1	1	1	1	1
Sat	2	2	2	2	2
Sun	2	2	2	2	1



The school summer vacation is a time for students to engage in creative and innovative activities. VASCSC's Summer Programme has always been immensely popular among children for its activity-based approach and choice of topics and themes it offers. Every year, a wide assortment of modules catering to children's varied interests and different age groups are offered. A variety of hands-on science, mathematics and technology-based modules are offered under this programme for participants to explore and learn with an element of fun. Effort is made to offer programmes based on emerging trends to give the children an exposure to the latest in science education. The modules are conducted in the Centre's well-equipped labs and spaces, facilitated by resource persons.

The Summer Programme 2023 was conducted during 25 Apr - 3 Jun 2023 and offered total 99 batches of 45 different modules for participation. The response to the programme was excellent, with 2700 participants. The programme was primarily conducted at VASCSC campus. 8 modules were conducted at VIKSAT, Ahmedabad campus.

Similar to previous years, the programme schedule was compiled in form of a brochure and distributed for wide dissemination of information and larger participation. The information was displayed on the Centre's website, social media and notice board. Most publicity was by

word of mouth due to the positive experiences of participants from previous years. A dedicated helpline number was assigned to respond to the queries of the large number of potential participants.



Modules were designed for age group starting std. 1; with each module of 1-2 weeks' duration. These were designed such that each child got opportunity to explore, create and learn through activities, experiments, model-making, games, etc. Interesting themes such as Astronomy, Aeronautics, Biology, Chemistry, Computers, Electronics, Mathematics, Model Rocketry, Physics, Robotics, Photography were included. Many new modules were introduced based on the latest trends and feedback from participants.

Summer Programme 2023 Modules

Name of Module	Level	Total Seats	Total Batches
Science is Fun Summer Camp	Std. 1 - 2	125	5
STEM Funday	Std. 4 - 6	60	2
Book Buddies - Jr.	Std. 2 - 3	15	1
Book Buddies - Sr.	Std. 4 - 6	30	2
How Small is 'nano'?	Std. 3 - 5	20	1
Space and Beyond	Std. 6 - 8	20	1
Nanocosmos	Std. 3 & above	20	1
Chem 4 Kids	Std. 2 - 5	160	8
Fun with Chemistry	Std. 6 - 8	100	5
Chemistry Exploration	Std. 9 - 10	20	1
Little Scientist	Std. 1 - 3	120	6
Science Exploration	Std. 4 - 6	60	3
Microscopic Exploration	Std. 6 - 8	60	3
Biology Investigation	Std. 8 - 10	50	2
Joy of Mathematics	Std. 4 - 5	80	4
Maths is Fun	Std. 6 - 7	40	2
Maths DIY	Std. 8 - 9	40	2
Vedic Maths	Std. 7 - 10	20	1
Turtle Graphics	Std. 4 - 5	36	2

Name of Module	Level	Total Seats	Total Batches
Coding for Kids	Std. 5 - 6	36	2
Android App Development for Beginners	Std. 7 - 9	18	1
3D Printing and Designing	Std. 6 - 7	36	2
Artificial Intelligence (AI) for Beginners	Std. 7 - 9	36	2
Arduino Robot Car	Std. 8 - 10	15	1
Design and Build a Circuit Board	Std. 8 - 10	15	1
Smart Home Automation	Std. 8 - 10	15	1
Electronics for You	Std. 5 - 6	45	3
Electronics World	Std. 7 - 8	30	2
Fun with Physics - Jr.	Std. 5 - 6	60	3
Fun with Physics - Sr.	Std. 7 - 8	60	3
Aeromodelling & Rocketry - Jr.	Std. 3 - 5	80	4
Making of Rocket Fuel	Std. 6 & above	40	2
Know Our Universe	Std. 5 - 8	80	4
Daytime Astronomy	Std. 5 - 8	40	2
Telescope Making and Handling	Std. 7 - 10	30	2
Asteroid Hunting	Std. 7 - 12	15	1
Space Telescopes and Data Analysis	Std. 7 - 12	15	1
Certificate Course in Amateur Astronomy	Std. 9 - 12	15	1
Gliders and Drone Avionics	Std. 7 - 9	10	1
STEAM Boot Camp - Jr.	Std. 4 - 5	30	1
STEAM Boot Camp - Sr.	Std. 6 - 8	30	1
Rocketry	Std. 6 & above	60	2
Aeromodelling	Std. 6 & above	30	1
Science of Photography	Std. 6 & above	20	1
Young Science Communicators	Std. 6 & above	15	1
Young STEM Challengers	Std. 6 - 9	30	1

Diwali Vacation Batches 2023

Diwali Vacation Batches were conducted during 17 - 25 Nov 2023. Fascinating modules with interactive sessions were designed to enable hands-on, experiential learning of the participants. 15 modules were offered, in which around 120 children participated.

An exciting module 'Science Outdoors' was conducted for students of std. 6-9 during 18-19 Nov 2023. In this module, the participants visited Halvad where they learnt about nature and biodiversity in the setting of



Little Rann of Kutch with activities such as bird watching, medicinal plants, and exploring salt pans. They carried out hands-on activities pertaining to light, chemical reactions, aerodynamics, astronomy, night sky viewing - to observe how these principles are at play in real life.

Diwali Vacation Batches 2023 Modules

Name of Module	Level	Batches
Little Science Explorers	Std. 1 - 2	1
3D Printing & Designing	Std. 5 - 6	1
Joy of Mathematics	Std. 4 - 5	1
Chem 4 Kids	Std. 1 - 4	1
Fun with Chemistry	Std. 5 - 8	1
Pyrotechnics	Std. 6 - 8	1
Fun with Physics - Jr.	Std. 4 - 5	1
Electronics for You	Std. 4 - 5	1
Little Scientist	Std. 1 - 3	1
Science Exploration	Std. 4 - 6	1
Nanotechnology: Small Wonders!	Std. 3 +	1
Astronomy with Python	Std. 7 - 11	1
Day time Astronomy	Std. 5 - 8	1
Science Outdoors @ Little Rann of Kutch	Std. 6 - 9	1
Rocket, Glider, Parachute	Std. 5 +	1

VASCSC collaborated with We Are All Humans (WAAH) Foundation for popularizing science and promoting innovative research in science for society. Under this partnership, two major initiatives were undertaken:

- WAAH Science Laureate Awards.
- Setting up school-level WAAH Community Science Centres (STEM Labs).

WAAH Science Laureate Awards

WAAH Science Laureate Awards were launched in 2022. The Awards are aimed to encourage youth and the scientific community for research and to recognize their scientific research for addressing societal issues and working towards their innovative solutions. They also aim to motivate young students to pursue science and encourage them to continue their higher studies and research in various fields of science and overall development of society.



The second edition of the WAAH Science Laureate Awards 2023 received entries from scientists, educators, research scholars, teachers, college and school students from different parts of Gujarat. The research work of nominees was meticulously evaluated by expert evaluators. Best 3 entries from Senior Category and best 4 entries from Junior Category were selected through a rigorous evaluation process.

WAAH Science Laureates 2023

Name of Laureate	Name of Mentor
Senior Laureates	
Ms. Kavya Jayant Mistry	Dr. Radhika Pandya and Ms. Divya Teli
Mr. Priyam A. Parikh	Dr. Reena Trivedi
Ms. Stuti Jha	Dr. Rama Gaur
Junior Laureates	
Mr. Jahan M. Vaishnav	Mr. Johny Abraham
Mr. Madhav K. Bhatt	Mr. Pravinbhai Sindal
Mr. Mann S. Tejwani	Mr. Mayank B. Pandey
Ms. Navya H. Madhu	-

The Award ceremony was held at VASCSC on 6 Jan 2024. Dr. Pankaj S. Joshi, Distinguished Professor & Founding Director, International Centre for Space and Cosmology, Ahmedabad University; Shri Kartikeya V. Sarabhai, Chairman, VASCSC Board of Governors; Shri C. B. Patel, Publisher & Editor, Gujarat Samachar (UK), Asian Voice (USA); and Shri Prafulbhai Amin, President, WAAH Foundation graced the occasion as honorable guests. Shri Dilip Surkar, Director, VASCSC; WAAH trustees and several notable guests were present on the occasion.

The Laureates along with their mentors were awarded with citations and scholarships or fellowships of total amount Rs. 600,000 for their innovative research.



WAAH Community Science Centre (WAAH CSC)

The WAAH CSC is set up in selected schools or institutions catering to underprivileged children, which may include schools located in rural or peri-urban area in different talukas of Gujarat. The prerequisite for the schools is adequate space and basic infrastructure. The vision is to set up 100 WAAH CSCs across Gujarat, out of which 23 have been set up and operationalized since the project commenced.

The aim of setting up WAAH CSC is to provide hands-on, experiential learning opportunity to students for understanding difficult STEM concepts. It is a platform to nurture innovative ideas; and to make STEM learning engaging, exciting, joyful and meaningful. It is one-of-a-kind learning facility for skills like problem-solving, critical thinking and creative thinking for the students as well as community. Regular hands-on STEM sessions are conducted for host schools' students. Additionally, the host institutions facilitate visits and conduct activities for nearby schools and local community.

A WAAH CSC is equipped with STEM learning resources consisting of over 150 Teaching Learning Material



(TLM) like models, teaching aids, large and small interactive exhibits, kits for performing experiments and demonstrations, equipment, puzzles, panels, charts, templates, publications, etc. The facility can be utilized for performing curricular and co-curricular science education activities. Teachers from the WAAH CSCs are provided training for carrying further the activities of science centre. During FY 2023-24, WAAH CSCs were set up in the following schools located in different districts of Gujarat:

- Takshashila Vidhyapith, Dhandhuka
- Ashram Shala Adivasi Jati, Palanpur
- Yoganjali Vidhyavihar, Ganeshpura
- Nirmalaben Ravji Chheda Prathmik ane Madhyamik Shala, Mandvi
- St. Xavier's High School, Dadhvada
- St. Xavier's English Medium School, Dediapada
- M. T. High School, Khambhat
- Jamiah High School, Sojitra
- The H. M. Patel English Medium School, Petlad, Anand
- Shree Sarasvati Shishumandir Primary School, Harij
- Sarvodaya Vidhyalay, Pindval, Dharampur
- Killol Primary School, Upleta
- Sarvoday Anudanit Nivasi Prathmik Shala, Virampur
- Dr. Kalam Innovative School, Amreli

Science Wall Planner 2024

The development of VASCSC's 2024 Science Wall Planner was supported by WAAH. The Planner was based on the theme 'International Year of Camels & Camelids' & contained important scientific information. 1000 copies of the Planner were printed and disseminated among WAAH CSCs and stakeholders.

Facilitating Participation of Underprivileged Children in VASCSC Programmes

The initiative was to support deserving students and facilitate their participation in various VASCSC programmes. It would help make science education more interesting, joyful, and accessible. The children participating could be school students or even school drop-outs, who needed support in terms of scholarships, subsidizing the programme fees, arrangements for their transportation or material and equipment support.

VASCSC Building Extension

A STEM Activity Hall was constructed on the first floor of VASCSC building, above the existing board room on ground floor, with support from WAAH. This has provided much-needed additional space to carry out activities of the Centre.

The STEM Activity Hall was inaugurated on 6 Jan 2024 by Dr. Pankaj S. Joshi, Shri Kartikeya V. Sarabhai, Shri C. B. Patel, and Shri Prafulbhai Amin.



VASCSC implemented the project titled 'L&T STEM Fun Event: STEM Events at Regional Level and National STEM Summit' with support from L&T CSR Division. The project was implemented in govt. and municipal schools where L&T's Engineering Futures programme was being carried out at Vadodara, Hazira and Chennai. Overall, 3508 students and 323 teachers from 126 schools participated in the programme. The project components included the following:

- (a) L&T STEM Fest - 3 events
- (b) National STEM Challenge

(a) L&T STEM Fest

Three interschool events titled 'L&T STEM Fest' were conducted at regional level; one each at Vadodara, Surat and Chennai. These two-day events highlighted the fun element in STEM. A festive atmosphere was created during the events, providing fun-filled avenues to engage in experiential learning. The events consisted of competitions, hands-on workshops, activity zones and exhibitions and were focused on students of std. 6 to 8.

The STEM Fest comprised competitions such as STEM Challenge, Science Art, Design Challenge, Science Elocution, & Science Quiz, that challenged the intellect and creativity of students. The winners received medals, STEM resource material and certificates as prizes.

Three hands-on workshops were conducted: Model Rocketry, Astronomy and Do It Yourself, in which each student was involved in hands-on activities pertaining to the workshop theme. They prepared models for an engaging experience. Science Shows were conducted to showcase fun & awe-inspiring STEM demonstrations.

Exhibition comprising panels, posters and interactive exhibits was put up. Also, a curated STEM exhibition showcased innovative projects, models, and ideas from participants. This platform encouraged knowledge sharing and collaborative learning. Activity zones such as science games, pledge tree, open quiz math puzzles were set up for all the participants to enjoy and learn.

Each event was inaugurated in the presence of dignitaries. Winners of the competitions received prizes in a Valediction ceremony organized at the conclusion of each event. Event participation details are as follows:

Location	Date	No. of Participants		
		Students	Teachers	Schools
Vadodara	15 - 16 Dec 2023	1202	104	40
Hazira	28 - 29 Dec 2023	1092	102	49
Chennai	10 - 11 Jan 2024	1214	117	37
Total		3508	323	126



(b) National STEM Challenge

L&T National STEM Challenge was a culmination of the regional STEM Fest events. The event was organized to provide a platform to students to showcase their innovative work, share their knowledge with others and increase their scientific curiosity & creativity, and celebrate STEM. It was organized at A. M. Naik Tower, Mumbai on 3 Feb 2024.

The programme participants included winners of the STEM Challenge competitions conducted in the STEM Fests organized at Vadodara, Hazira and Chennai by VASCSC; and also those at Mumbai, Talegaon and Coimbatore. 1158 student contestants from govt. and municipal schools under L&T project had participated in these regional level STEM Challenge competitions, out of which the 22 winning teams competed in the National STEM Challenge for grand prizes.

The National STEM Challenge Competition was inaugurated by Ms. Mabel Abraham, Head, CSR, L&T and Shri Dilip Surkar, Director, VASCSC. The student projects were evaluated by jury comprised Mr. Koustubh. A. Phalnikar, GM - Product & Technology Development Centre, L&T Defence; Dr. Lalit Sharma, STEM Expert & Managing Trustee, Vigyan Setu Foundation, Navi Mumbai & Dr. Shamin Padalkar, Asst. Professor, Centre of Excellence in Teacher Education, Tata Institute of Social Sciences (Mumbai Campus).

After the exhibition, the students attended a masterclass on 'Emerging Technologies' conducted by VASCSC experts. The masterclass aimed at providing orientation of students to latest technologies such as 3D printing,



Artificial Intelligence, Machine Learning, Internet of Things, Robotics, sensors, microcontrollers, drones, etc. The NGO partners of L&T had put up stalls to showcase their work in field of STEM education and engage the visitors. An exhibition of prize winning 'Science Art' paintings from STEM Fest at Hazira, Vadodara and Chennai was put up.

The programme concluded with an Award Ceremony. Mr. S. N. Subrahmanyam, Chairman & Managing Director, L&T was the Chief Guest. Mr. Chander Mohan, Head, NCSTC, SEED & Director, Vigyan Prasar, Dept. of Science & Technology, Govt. of India (Retd.) was the Guest of Honour. Esteemed guests at the award ceremony were Mr. M. M. Chitale, Chairman of CSR Committee & Independent Director, L&T; Mrs. Meena Subrahmanyam, President, Prayas Trust; Mr. R. Shankar Raman, Chief Financial Officer, L&T; Mr. Anup Sahay, Head, Corporate Strategy & Special Initiatives, L&T; Ms. Anita Shah, L&T; Ms. Mabel Abraham, Head, CSR, L&T and Shri Dilip Surkar, Director, VASCSC.



VASCSC initiated the project titled 'Promoting STEM Hands-on Learning in Schools of Gujarat' to support implementation of the NEP 2020, with the support of Truetzschler India Pvt. Ltd. (TIPL). The project was initiated in previous year and it successfully concluded in the reporting year, with total participation of 14377 students and 1266 teachers from 679 schools of Gujarat.

The project objective was to promote STEM learning through various activities. STEM education is an interdisciplinary approach useful for enhancing conceptual understanding and fostering skills like critical thinking, problem solving, creativity, etc. Experiential and hands-on learning play a key role in STEM education. With this background, the project aimed to promote STEM learning in schools, through the implementation of the following components:

1. STEM outreach in schools
2. School group visits to VASCSC
3. STEM hands-on teachers training workshops



STEM Outreach in Schools

Students in rural and remote areas lack access to quality STEM education. It is not possible for them to visit science centre. Through this activity, effort was made to provide an opportunity to students to know interesting scientific facts & phenomena and the latest happenings in the field of science education in their own schools. A total of 8939 students, 330 teachers from 62 schools participated in the STEM outreach programme.

VASCSC resource persons visited different schools and conducted experiments and activities based on the topics of std. 5 to 8. It was a one-day school level programme. The activities included science hands-on activities, science show, demonstrations, science behind magic, experiments related to curriculum, using innovative teaching learning material, quiz, games, etc.

In addition, informative take-away resource material was given to the respective schools for follow up activities as well as reinforcement of learning. The session included hands-on activities and demonstrations.

School Group Visits to VASCSC

School groups, comprising students and teachers, regularly visit VASCSC from different parts of Gujarat and from other States. For such groups, VASCSC conducted innovative, interactive, and structured sessions in STEM topics. A proper schedule and a dedicated time slot of half day was allotted for the visiting group. The session consisted of demonstrations as well as hands-on activities. The groups visited the well-equipped laboratories and discovery hall, which is open for visitors and has interactive exhibits that encourage visitors to explore and learn. A set of useful resource material was given to schools. 5438 students, and 291 teachers from 53 schools participated in the activity during the year.

STEM Hands-on Teachers Training Workshops

Teachers training workshops on 'STEM Hands-on Learning' for teachers were conducted across Gujarat. The duration of each workshop was 2 full days. The session included activities based on the topics of standard 6 to 8 and included practical activities related to STEM which could be easily carried out by the teachers in their classroom. A set of useful resource material was given to the teachers for carrying out further activities.

A total of 12 workshops were conducted under the project in which 645 teachers from 564 schools participated. The details are given as follows:

Date	Location	Teachers
18-19 Nov 2022	Atul Campus, Valsad	63
23-24 Nov 2022	Vadodara	63
25-26 Nov 2022	Bhuj, Kutch	45
28-29 Dec 2022	Ambaji, Banaskantha	58
20-21 Jan 2023	Anand	49
1-2 Mar 2023	Mitana, Morbi	50
28-29 Mar 2023	Vijapur, Mehsana	60
11-12 Jul 2023	VASCSC (Ahmedabad Urban)	53
13-14 Jul 2023	VASCSC (Ahmedabad Rural)	44
27-28 Jul 2023	VASCSC	53
2-3 Aug 2023	Nadiad, Kheda	50
23-24 Aug 2023	Varahi, Patan	57
Total		645

With support of TIPL, VASCSC is implementing the project titled 'Upgradation of STEM Labs at VASCSC for enhancing STEM hands-on learning in school education'. With new advancements in science and technology, VASCSC needed to develop its STEM education capacities, more in tune with today's needs and pace. In order to take the benefits of the Centre to wider group of people, it was essential to upgrade the Centre's education facilities, especially the labs, to be able to cater to students up to undergraduate level. With this background, the project was conceptualized.

The provisions under the project are enabling the Centre to enhance its lab capacity, for further improving its STEM hands-on education activities and to make better the learning experience of students and teachers. This was achieved through upgradation of its STEM labs, exhibitions, training and hands-on activity spaces. With support for lab and other upgradation, repair, maintenance, and other critical areas; VASCSC has been able to scale up its STEM education facility and enhance

the STEM learning experience for the student, teachers and general public visiting here.

The work carried under the project was segregated into the following components:

1. Lab spaces upgradation: Repairs and modifications
2. Furniture and fixtures
3. Lab equipment and supplies: Scientific gadgets
4. Lab consumables: Activity material, chemicals
5. ICT upgradation

The upgraded labs and material procured under the project is now being utilized for smooth operation of various activities of the Centre. These include Summer Programme 2024, Projects & Practicals, School Visits, School Science Forum, as well as Student and Teacher Workshops. Some major scientific equipment either procured or developed under the project include flight simulator joystick, wind tunnel, eyepieces for telescopes, laser engraver machine, robotics kits, neuroscience kit, micro:bits, 3D pens, and solar distillation unit.



In collaboration with Kostwein, VASCSC implemented the project 'STEM Hands-on Education for Pre-Service Teachers & School Students'. The following two activities were conducted under the project:

1. STEM Hands-on Workshops for Pre-service Teachers
2. School Group Visits to VASCSC

1. STEM Workshops for Pre-service Teachers

Training workshops were conducted to develop the capacity of pre-service teachers for STEM hands-on education. 8 such workshops, of 2 days each, were conducted in different locations of Gujarat. The preservice teachers included students of B. Ed. & M. Ed. courses from various colleges.

Workshop Participation Details

Workshop Dates	Venue/ Location	Participation	
		Teacher Trainees	Teachers
8 - 9 Dec 2023	Shri M. B. Patel School, Gandhinagar	56	2
19 - 20 Dec 2023	Shri I. J. Patel B. Ed. College, Mogri	47	9
19 - 20 Jan 2024	IITE, Gandhinagar	82	4
5 - 6 Mar 2024	VASCSC, Ahmedabad	45	2
12 - 13 Mar 2024	VASCSC, Ahmedabad	62	3
14 - 15 Mar 2024	Smt. L. L. Kakadia B.Ed. College, Bhavnagar	57	6
19 - 20 Mar 2024	Maitri Vidyapeeth, Surendranagar	59	2
19 - 20 Mar 2024	DIET, Patan	57	2
	Total	465	30

In the workshops, experiential learning opportunity was presented to the participants, similar to an actual STEM class in school. It was intended to equip them with skills and knowledge for effective STEM teaching in schools.

Hands-on sessions were conducted in which the participants were themselves engaged in activities like model making and performing experiments. They prepared simple, low-cost teaching learning material using easily available material. Some demonstrations of innovative experiments and activities by VASCSC were carried out. Information on how to effectively use the models prepared by them and the TLM was given.

The following colleges participated in the workshops:

- R. H. Patel English Medium B. Ed. College, Gandhinagar
- S. S. Patel College of Education, Gandhinagar
- Shri I. J. Patel B. Ed. College, Mogri
- Indian Institute of Teacher Education, Gandhinagar



- J. G. College of Education, Ahmedabad
- A. G. Teachers College, Ahmedabad
- Smt. M. N. K. Dalal Education College, Ahmedabad
- DIET, Ahmedabad City
- Shri Mahalaxmi DIET, Ahmedabad Rural
- Smt. Laxmiben L. Kakadia B.Ed. College, Bhavnagar
- DIET, Bhavnagar
- Shri C. H. Shah Maitri Vidyapeeth Mahila College of Education, Surendranagar
- Smt. M. M. Shah College of Education, Wadhwan
- DIET, Patan
- L.N.K. College of Education, Patan

2. School Group Visits to VASCSC

Under this programme, students from various schools spent half a day at VASCSC and participated in different activities planned for them. Some of the activities were indoor demonstrations, games and puzzles, Science outdoor activity, visit to Centre's facility and labs. Sessions based on Artificial intelligence, Robots, Sensors, 3D printing were popular among the students. 1553 students and 74 teachers from 16 schools participated in this activity. A special visit included that from students of Blind People's Association Secondary School for the Blind.



A new partnership was initiated with Kuehne+Nagel India, who supported the following two projects:

- (a) Solar Rooftop Power Plant at VASCSC for Climate Action and STEM Education
- (b) Mobile STEM Lab - STEM and Sustainability Education in Rural Schools in Gujarat

(a) Solar Rooftop Power Plant at VASCSC

To transform VASCSC into a sustainable building, a solar power plant having 50 KW capacity was installed on rooftop of VASCSC. The objective for setting up this facility were: (i) to leverage the natural source of energy for the functioning of the STEM education and training facilities, which will result in saving substantial amounts of electricity from the grid, contributing to combating climate change (ii) to further utilize the savings for climate change education and STEM hands-on activities of the Centre, which will directly benefit in furthering the objectives of the Centre, and (iii) to demonstrate and publicize benefits of installing solar power and the resulting impact to the community.

The visitors at the Centre are given a tour of the building and various facilities including STEM education labs, and interactive exhibits. The rooftop solar panel installation can be included as one of such facilities and the team will demonstrate and brief about the benefits of utilizing solar energy and its impact on the environment in terms of clean and green energy, the resulting reduction in carbon emissions. Since a large part of such visits comprises students, it will impart knowledge and significance of renewable energy to the young minds.

(b) Mobile STEM Lab

VASCSC has procured a new Mobile STEM Lab vehicle. This is a 14-seater Force Urbania Van which will function as Mobile STEM Lab to provide STEM and sustainability education in rural schools of Gujarat.



Many children from rural areas get limited or no exposure or access to laboratory facilities, equipment, or experiments. The Mobile Lab will have the material such as necessary equipment, TLM, activity material, to conduct curriculum-based experiments and hands-on activities. At the school, a makeshift lab or activity space is created and the team of Science Communicators from VASCSC conduct curriculum-based experiments and hands-on activities with students. Some general science activities which enable students to understand STEM concepts, develop a scientific temperament and understand sustainability aspects are included. Giveaway resource material, is provided to the schools to be used by the students and teachers after the visit.



With support from KHS Machinery, 'VASCSC Science School for Children: Strengthening STEM Education in Schools of Gujarat' project was undertaken. The collaboration with KHS CSR was initiated in 2015, with many STEM education projects implemented since then.

The VASCSC Science School for Children was conducted during 19 - 23 Feb 2024 at Hirapur Primary School. 100 students of std. 6-8 from seven schools of Ahmedabad participated. The participating schools were Hirapur Primary School, Harniyav Primary School, Badodara Primary School, Bhupal Primary School, Bhiya Primary School, Rampura Primary School and Khant no Kuvo Primary School.

The objective was to provide experiential learning to students where they could try their hands at fun-filled activities and learn about various difficult concepts easily and better; in line with recommendations of NEP 2020. Concepts from school curriculum were included so that the learnings were reinforced. With exposure to this experiential learning, it was expected that students would approach science and mathematics with interest and their conceptual understanding would increase.

The programme content included physics, chemistry, biology, mathematics, astronomy, environment, robotics, etc. concepts. Sessions on emerging technologies and their application in daily life were included. Methodology like simple experiments, demonstrations, hands-on activities, model-making, presentations, group work and discussions were used

to impart the content. Fun-filled hands-on sessions were conducted every day.

Setting up Space Science Club

A Space Science Club was set up at D. N. High School, Anand. The 'Space Science Club' is intended to be hub for students to understand, learn and explore various concepts related to space science and technology through various activities.



This facility can be utilized by all the students of the school. The Space Club aimed to provide an opportunity to learn science & mathematics concepts by participating in a variety of interesting space science-based events. The Space Science Club was inaugurated on 17 Oct 2024, in the presence of Shri Yatindra Sharma, MD, KHS and other dignitaries. VASCSC provided the necessary resources, technical guidance, training, & handholding to the host school.



With support from EY Foundation, the project titled 'STEM For Girls: Popularization of EY STEM App for Girl students' was implemented by VASCSC. The project had participation of 2904 students of std. 8-12.

The EY STEM App is gamified mobile platform that aims to influence career choices of girl students to create a more equitable future and empower the next generation of girls in STEM. The project focused on popularizing the EY STEM App among girl students aged 13-18 years old, of schools in and around Ahmedabad district, Gujarat.

21 half-day STEM Hands-on Outreach Programmes were conducted in schools to introduce the EY STEM App. The activities conducted were one of those listed in the App to encourage students to use it for STEM learning. These interactive workshops provided experiential learning of emerging technologies and developed students' understanding of curriculum-based STEM concepts related to emerging and new technologies. Essential skills like collaboration, experimentation, observation, inquisitiveness, critical



thinking, creativity, innovation, designing, application, and problem-solving, were also cultivated.

School selection was done based on expression of interest from deserving schools. VASCSC provided material, tools, and resources required for the activities as well as resource material to schools for follow-up, and extension activities, to reinforce the learning.

STEM Teachers Workshops

Additionally, two state-level STEM Teachers' Training Workshops were organized, in which a total of 117 govt. school teachers participated. The first workshop was organized at Leh, Ladakh during 6-8 July 2023 in which 55 teachers from Leh participated. The second workshop was organized during 10-12 July 2023 in which 62 teachers from Kargil participated.

The objective was to develop the teachers' capacities for STEM teaching, strengthening the understanding of STEM through hands-on method, & creating awareness about resources for innovative STEM teaching such as the EY STEM App. The workshops included sessions on STEM, Model Rocketry, Astronomy and Emerging Technologies. Some popular topics included 3D printing & designing, AI & ML, sensors and circuits, and career opportunities in STEM.



Details of STEM for Girls Outreach

Date	School/Venue	Participation
23 Jun 2023	Dr C.G. English School	115
27 Jun 2023	Hillwoods School	123
28 Jun 2023	Anand Niketan School	284
29 Jun 2023	Anand Niketan School	103
4 Jul 2023	F. D. High School	203
5 Jul 2023	F. D. High School	225
8 Jul 2023	J. G. International School	87
11 Jul 2023	Shiv Ashish World School	136
13 Jul 2023	F. D. English H. S. School	126
19 Jul 2023	Shivashish School	53
10 Aug 2023	Adani Vidya Mandir	210
24 Aug 2023	My Own School	156
25 Aug 2023	Nest Public School	109
26 Aug 2023	Paras School	123
29 Aug 2023	New D. P. Campus	73
31 Aug 2023	D. P. School	112
5 Sep 2023	Crayon School	82
6 Sep 2023	C. N. Eng Medium School	83
16 Sep 2023	VASCSC - 1	74
26 Oct 2023	Crystal International School	250
28 Feb 2024	Iqra School	70
2 - 6 Apr 2024	VASCSC - 2	107
Total		2904

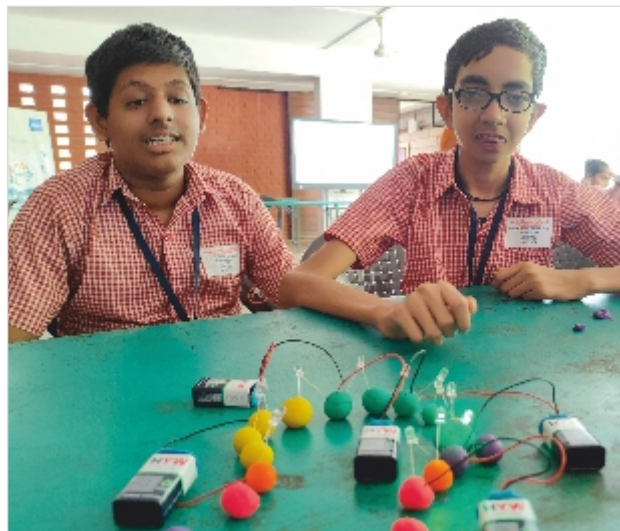
The project titled 'STEM for Equity: Empowering students with STEM Hands-on Education' was conducted with support of Intel. The project was sanctioned as part of Intel Involved Social Initiative Contest 2023-24, conducted by Intel for its employees. It was one of the five winner projects of the contest.

Under the project, 12 STEM education workshops were conducted for students from schools catering to socio-economically disadvantaged groups. 1010 students of std. 6-8/9-12, participated in these workshops.

Priority was given to schools catering to students from under-represented groups such as minority group, specially-abled, only girls' school, scheduled tribe/scheduled caste located in and around Ahmedabad district and other neighbouring districts, and those who have no access to STEM education. Involving intellectually and physically challenged students in STEM activities promotes inclusivity and diversity within the field. By creating an environment where all students are encouraged to participate and contribute, educators and peers can challenge stereotypes and promote acceptance & understanding of individuals with diverse abilities.

One full-day workshop was conducted in each of the selected schools. Engagement in these interactive workshops provided experiential learning of Science and Mathematics and develop students' understanding of curriculum-based STEM concepts. Some of the STEM demonstrations and activities covered in the workshop were balancing butterfly, 3D printing and designing,

squishy circuits, trumpet, whirling fan, paper straw rocket, water booster rocket, telescope making, writing with water, understanding binary numbers, spin art machine, bioluminescence. These was based on the assessment of the students' requirements in the different schools. Accordingly at some schools, students were given introduction to robotics using microcontrollers like BBC Micro:bit, demonstrations of different robots and AI and ML projects.



In schools catering to intellectually challenged children, activities were carefully selected as students had limited cognitive abilities. Students with mild intellectual disability responded and worked actively in the workshops, while those with moderate intellectual disability needed more assistance.

Details of STEM For Equity Workshops

Sr. No.	Name of School	Target group	Std.	No. of Participants
1	Sharda School (B. M. Institute of Mental Health), Ahmedabad	Intellectually challenged	Mild & Intermediate	55
2	Gawada Primary School, Mehsana Dist.	Underprivileged	Std. 6 - 9	70
3	Shwas Foundation, Ahmedabad	Underprivileged	Std. 6 - 8	60
4	Health and Care Foundation, Ahmedabad	Intellectually challenged	Mild & Intermediate	20
5	Jamiya High School, Sojitra	Minority	Std. 8	80
6	Ashish Vidyalaya, Kesharpura, Sabarkantha Dist.	Minority	Std. 6 - 8	95
7	Deaf and Mute School, Ahmedabad	Differently abled	Std. 6 - 8	82
8	Apang Manav Mandal, Ahmedabad	Differently abled	Std. 6 - 8	37
9	Sadbhavna Charitable Trust, Ahmedabad	Intellectually challenged	Mild & Intermediate	15
10	Ashram Vinay Mandir, Ahmedabad	Girls	Std. 9	87
11	St. Xavier's Eng Medium School, Dediapada, Narmada Dist.	Rural, remote, tribal	Std. 6 - 8	224
12	St. Xavier's High School, Dadwada, Narmada Dist.	Rural, remote, tribal	Std. 6 - 8	185
Total				1010

Astronomy Events

Two exciting astronomy-based events were organized for students and community at VASCSC:

- On the momentous occasion of moon landing of Chandrayaan-3, an interactive session was conducted on 23 Aug 2023. VASCSC team communicated step-by-step process of the landing on moon and answered audience queries. This was followed by live viewing of the event. 300 students and their parents participated.
- On 2 Sep 2023, a session was conducted to coincide with successful launch of the Aditya-L1, the first space based Indian mission to study the Sun. 100 students participated in the session.

Climate Change Education

VASCSC conducted a hands-on workshop on 'Climate Change Education' for students on 16 Aug 2023. The objective was to create understanding of the science behind this global challenge, developing sustainability mindset, and highlighting the connection between concepts in the textbooks & their real life applications. 100 students and 6 teachers from different schools of Ahmedabad participated in this workshop.

Model Rocketry Workshop

A Model Rocketry workshop was conducted by VASCSC at IAR University, Gandhinagar for their students. 58 students participated in this workshop, conducted on 25 Oct 2023. The participants fabricated water booster model rockets, launched them and understood various STEM concepts through this activity practically.

Teachers Training Workshops

Several STEM hands-on teachers training workshops were conducted at various locations across India:

- A STEM hands-on workshop was conducted during 11-12 May 2023 at HRDC, Delhi Public School Society, Greater Noida. 47 primary school teachers, from various DPS across India participated.



- A STEM hands-on workshop focusing on STEM Labs, was conducted during 5-6 Oct 2023 at Dehradun, Uttarakhand. 15 master trainers from American India Foundation participated. The participants are educators actively engaged in running of STEM labs & conducting trainings in various locations of Uttarakhand.



- A STEM workshop, with focus on School Science Activity Centre, was conducted during 7-8 Feb 2024 at Gadu, Gujarat for govt. school teachers. 35 teachers from schools where such Science Activity Centres have been set up, participated in this workshop, which was supported by RAF Global.



- A STEM hands-on workshop was conducted during 22 - 24 Feb 2024 at VASCSC. 20 teachers from SAATH Charitable Trust participated in this workshop.

Emerging Tech Workshop

VASCSC conducted two workshops at India Science Festival organized at IISER Pune - one each on 20 Jan 2024 and 21 Jan 2024. The workshops titled 'Hands-on Exploration of Emerging Technologies' were aimed at students of std. 8-12 and included topics such as introduction to robotics, AI, 3D printing, and holography. 50 students from various schools participated.

Advanced B.Sc. (Physics)

VASCSC in collaboration with Gujarat Science Academy, St. Xavier's College, Ahmedabad; organized the Advanced B.Sc. (Physics) Summer Programme 2023 during 6- 23 May 2023 at St. Xavier's College.

This residential programme was aimed at motivating students towards research and careers in Physics. The programme components included interactive lectures, designing and building experiments and exposure to research institutes such as IPR, PRL, ISRO, problem solving, assignments, career guidance, etc. The lectures were taught by scientists from IPR, PRL and Ahmedabad University; allowing the students to come in contact with research scientists. 28 students from science colleges of

Gujarat were enrolled after undergoing a rigorous selection process.



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Astronomy Workshops in Schools

Partner: American India Foundation

The project 'STEM Education for All - Astronomy Workshops in Schools' was implemented in collaboration with American India Foundation (AIF). A series of Astronomy hands-on workshops were conducted for students of std. 6-8 in Vadodara and Surat districts; as well as in Ahmedabad. In all, 1301 students and 79 teachers from the host schools participated in the 22 workshops.

The workshops aimed to satisfy the children's natural curiosity towards astronomy and help them develop understanding of astronomy concepts. The workshops included creative and observational activities. These included making of models such as Phases of the Moon, Sun Dial, Circumpolar Constellations, Box Telescope and sky viewing through telescope. VASCSC provided the material, tools and resources required for the activities as well as resource material to schools for follow-up and extension activities so that the learning could be reinforced.



Details of Astronomy Workshops

Date	Name of School	Students	Teachers
Baroda District			
31 Mar 23	Sundarpura Primary School	99	6
21 Jun 23	Vasna Kotariya Pry. School	99	7
22 Jun 23	Limbda Shresth Pry. School	132	2
23 Jun 23	Maretha Primary School	58	3
27 Jun 23	Rushi Vishwamitra School	60	2
11 Aug 23	Shree Pushti Pry. School	41	13
Surat District			
11 Jun 23	Asnabad Primary School	75	4
11 Jun 23	Sharda Vidhyalay	60	2
15 Jun 23	Bhatgam Prathmik Shala	54	3
24 Jun 23	Z.M. Patel High School	73	4
11 Jul 23	Pinjrat Primary School	45	5
11 Jul 23	Lavacha Choriyasi School	68	7
Ahmedabad			
5 Dec 23	Ranip Pagar Center School	43	3
6 Dec 23	Thaltej Pry. School - 2	47	2
7 Dec 23	Vastral Primary School	47	3
20 Dec 23	Gota Housing Pry. School	46	2
22 Dec 23	Sola Anupam Pry. School	40	2
3 Jan 24	Sankalitnagar Pry School -2	44	2
4 Jan 24	Hathijan Gujarati Shala - 2	41	3
5 Jan 24	Ramol Primary School	40	2
17 Jan 24	Ognaj Primary School	44	1
19 Jan 24	Miroli Primary School	45	1
Total		1301	79

Teaching Learning Material (TLM) development is a major activity of VASCSC. This material is developed with the objective of making teaching learning process lasting and easy for teachers and students. This TLM is suitable for primary and secondary school level, for both classroom and individual use. Kits, books, charts, models, exhibits, puzzles etc. have been developed and available for distribution at VASCSC Science Shop. English, Gujarati and Hindi have been used in the manuals and books. This material is in demand from all across India. The following material was developed in FY 2023-24:

IOT Starter Kit

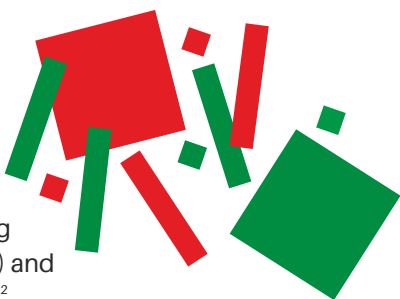
Internet of Things (IoT) refers to the interconnection of everyday physical objects with the internet. The IoT Starter Kit includes sensors, actuators, microcontrollers, and communication modules. Using the kit, one can connect various devices and sensors to the internet, gather real-time data and control them remotely through user-friendly interface. Some of the projects that can be performed using the kit include Home Automation System, Smart Arm, Smart Irrigation System, Air Monitoring Systems, Smart City Solutions, Smart Gas Leakage Detector, Smart Door, Automated Table Lamp, Temperature & Humidity Monitoring at Home, and Smart Attendance using RFID Tag.

Robotics Starter Kit

This beginner's kit provides hands-on learning experience in robotics and exploring the principles of automation. It contains a range of components like micro controller Arduino UNO, sensors, actuators, and other electronic components that will enable users to build, program, and interact with their own robot creations. This can be used to build basic robots like obstacle avoiders, smart street light system, robotic arm, maze solving robot, hidden camera detector, line followers, light trackers or weather station, amongst others.

Algebra Tiles

This mathematics TLM is useful to represent or visualize a variety of different algebraic concepts. The kit includes 20 small square counters representing one unit value, 10 rectangular pieces representing value of x (variable) and 10 larger squares x^2 .

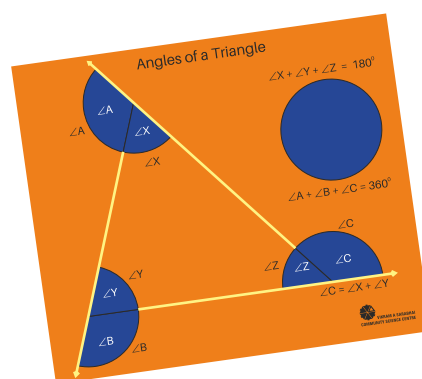


Angles of a Triangle

This TLM is used to verify the three main properties related to angles of a triangle, viz.

1. The angle sum property of a triangle,
2. The exterior angles property and
3. Sum of exterior angles of a triangle is equal to 360° .

It consists of a Board with grooves forming a scalene triangle, with its interior and exterior angles cut out and given separately; and one circular slot.



Sum of Exterior Angles of a Polygon

This TLM is used to verify that the Sum of exterior angles of a polygon is equal to 360 degrees. It consists of a Board containing two polygons (quadrilateral and pentagon) with their exterior angles carved out and given separately; and two circular grooves of different radii.

BioConnect Learning Cards

This TLM contains a set of 64 cards, string, pins and a user manual. Each card contains a picture of a component of the ecosystem on one side and its brief description on the other. It can be used by both school teachers and students to understand different ecological concepts through interactive games and quiz. This is helpful to develop a deeper understanding of nature and its conservation.



Science Wall Planner 2024

The annual Science Wall Planner is a unique theme-based publication of the Centre where the year planner is complemented with useful scientific information. It has been popular and well-appreciated. The planner is a large format chart of size 36"x23" which can be put up on notice board, panel or wall in schools or institutions. The 2024 Wall Planner was developed on the theme 'International year of Camelids' and supported by WAAH.



Vignan Drashti

This is a Gujarati bimonthly magazine published by VASCSC since 24 years. Six volumes were brought out in the reporting year. It is replete with information, pictures and illustrations and brought out in colourful, A3 size, eight-page format. It contains articles, activities, experiments, latest in science, puzzles, science toons and amazing facts. It can be kept in library or put up on notice board for multiple readers to access it at a time.

Science Gallery

A revamped version of Science Gallery was brought out in English as three separate sets: Science Gallery - Astronomy, Science Gallery - Biology, and Science Gallery - Chemistry.

Each set consists of 12 charts of size 18" x 25" and covers interesting topics from the school curriculum. Simple language and relevant graphics are used for children to gain better understanding of the concept. This TLM will provide STEM learning opportunity when displayed in classrooms, labs or school corridor. These charts can be used individually for imparting scientific concepts and the entire set as a science exhibition module.

Science Gallery - Astronomy: The charts included topics such as Our Solar System, Mars - The Red Planet, Eclipses, Star and Planet Formation, Stellar Evolution, Exoplanets, Types of Exoplanets, Galaxies and Beyond, Telescopes, Windows of Astronomy, Wonders of the Universe, Coordinates and Celestial Sphere.

Science Gallery - Biology: Topics included Planet Earth, Oceans, Climate Change, Biogeochemical Cycles, Food Web, Adaptation in Animals, Under the Microscope, Microbes, and Human Body.

Science Gallery - Chemistry: Topics included Avogadro's Number, Atomic Mass and Atomic Weight, Mole and Mole Fraction, Molarity and Molality, Normality and Formality, Exceptional Elements, Crystals and Lattice Structure, Happiness Chemicals, Flame of a Candle, Green Hydrogen, Electrochemistry, and Quantum Dots.



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- Truetzschler India
- VIKSAT
- Vovantis Laboratories
- WAAH Foundation

Our Bankers

- Bank of India
- HDFC Bank
- ICICI Bank
- State Bank of India

Our Auditors

- Asim Mehta & Associates
- Manubhai & Shah LLP
- Yogesh K. Dave & Co.

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(As on 31 March 2024)

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Bengaluru

Member Secretary

Shri Dilip Surkar
Executive Director
Vikram A Sarabhai Community Science Centre
Navrangpura, Ahmedabad 380 009

As per the requirement of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, VASCSC has an Internal Committee which has been constituted in accordance with the provisions of section 4 of the said Act, to provide protection against sexual harassment of women at workplace and for the prevention and redressal of complaints of sexual harassment and for matters connected therewith and incidental thereto. During this year no complaint of Sexual Harassment was reported at VASCSC. VASCSC has included the brief introduction of the provisions of the above Act as part of its orientation programme for the new joiners. The Anti Sexual Harassment Policy is in place.



Shri Dilip Surkar received the Mahatma Award for Social Good and Impact on behalf of Vikram A Sarabhai Community Science at New Delhi on 2 Oct 2023.



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