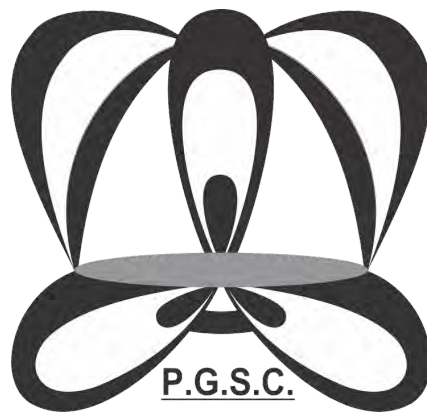




**Pushpa Gujral Science City**

**ANNUAL  
REPORT  
2022-23**





## **THE LOGO OF SCIENCE CITY**

The Logo depicts the traditional Indian philosophical concept of cosmic energy in the form of a meditating posture. An eternal flame of knowledge has radiating halows which signify dissemination of knowledge and wisdom to all.

**Annual Report**  
**2022-23**

# ਸਾਇੰਸ ਸਿਟੀ ਦਾ ਗੀਤ Science City's Anthem

ਇਹ ਨਗਰੀ ਹੈ ਵਿਗਿਆਨ ਦੀ, ਤਕਨੀਕਾਂ ਦੇ ਸਨਮਾਨ ਦੀ।  
Where Science is valued and technology acclaimed.....

ਅਸੀਂ ਨਵੀਂ ਸੋਚ ਨੂੰ ਲਿਆਵਾਂਗੇ, ਘਰ-ਘਰ ਵਿਗਿਆਨ ਪਹੁੰਚਾਵਾਂਗੇ।  
We endeavour to foster new ideas and take science to all,

ਸਾਡੇ ਸਭ ਵਿੱਚ ਇਕ ਵਿਗਿਆਨੀ ਹੈ, ਇਹ ਗੱਲ ਅਸੀਂ ਪਛਾਣੀ ਹੈ।  
Recognizing the scientist within each of us, big or small,

ਅਸੀਂ ਪ੍ਰਸ਼ਨ ਕਰਾਂਗੇ, ਪੁਛਾਂਗੇ, ਆਪਣੇ ਉੱਤਰ ਵੀ ਲੱਭਾਂਗੇ।  
We will question, enquire, investigate and comprehend,

ਨਵੀਆਂ ਕਾਢਾਂ ਨੂੰ ਵਧਾਉਣਾ ਹੈ, ਚੌਗਿਰਦਾ ਵੀ ਬਚਾਉਣਾ ਹੈ।  
Encouraging innovation, environment protection and sustainable development,

ਜਦ-ਜਦ ਅਸੀਂ ਨਵਾਂ ਸੋਚਿਆ ਹੈ, ਕੁਝ ਨਵੀਂ ਖੋਜ ਨੂੰ ਖੋਜਿਆ ਹੈ।  
Stimulating ingenuity and furthering inventions,

ਆਓ ਸਾਰੇ ਹੱਥ ਫੜਾਓ, ਰਲ-ਮਿਲ ਕੇ ਜਾਗ੍ਰਿਤ ਹੋ ਜਾਓ।  
Let us join hands to enlighten ourselves and awaken,

ਅਸੀਂ ਨਵੀਂ ਸੋਚ ਨੂੰ ਸਜਾਉਣਾ ਹੈ, ਇਕ ਨਵਾਂ ਸਮਾਜ ਬਣਾਉਣਾ ਹੈ।  
And induct new vision & actions to kindle social transformation,

ਅਤੇ ਅੱਗੇ ਵਧਦੇ ਜਾਣਾ ਹੈ।  
Come, Let us together move forward.....

ਅਤੇ ਅੱਗੇ ਵਧਦੇ ਜਾਣਾ ਹੈ।  
Come, Let us move forward.....

ਅਤੇ ਅੱਗੇ ਵਧਦੇ ਜਾਣਾ ਹੈ।  
Come, Let us move forward.....

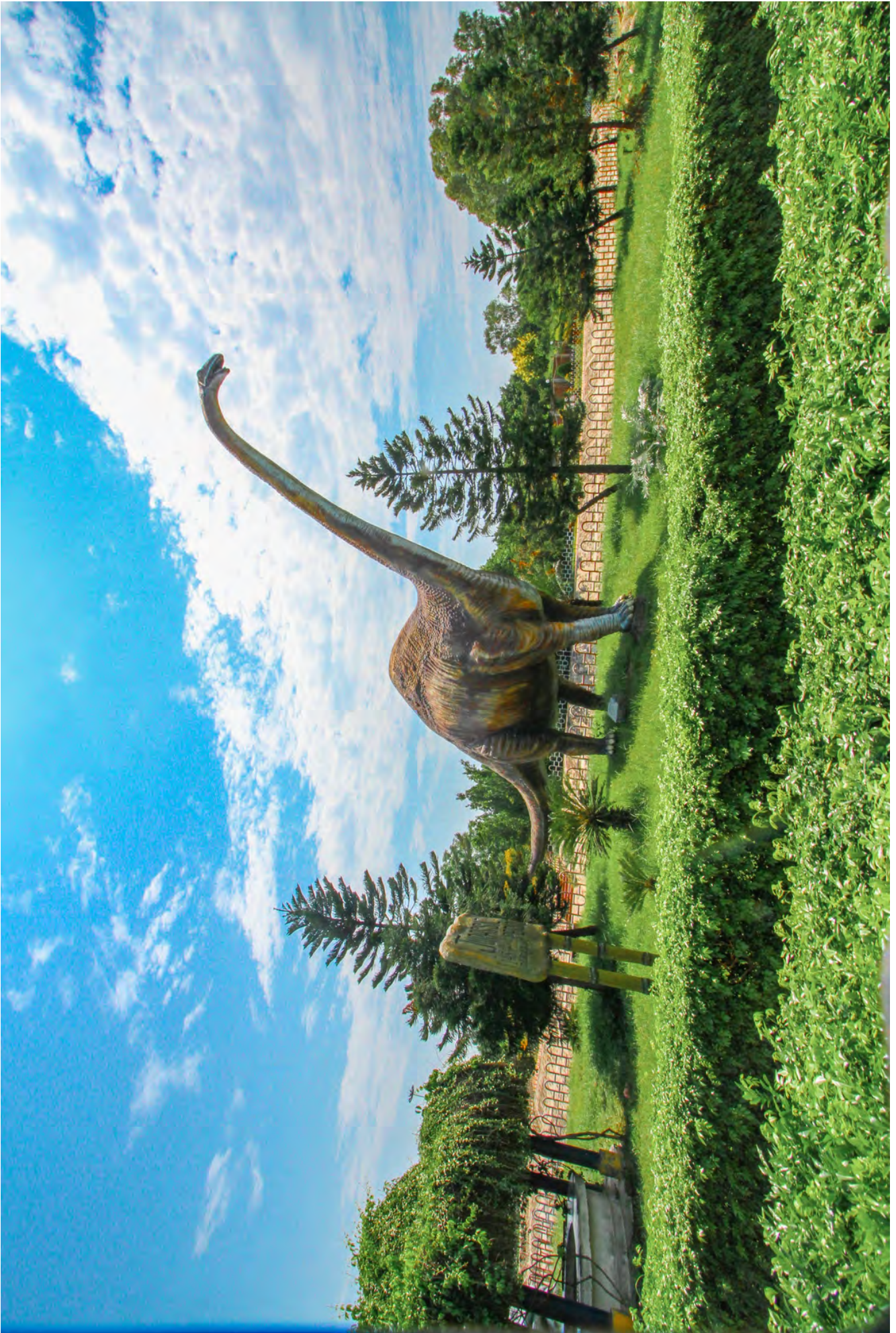
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Lyrics: Dr. Neelima Jerath, Director General, PGSC  
Music Composer & Singer: Mr Parduman Kumar, HMV College, Jalandhar  
Music Arranger: Mohit Kashyap  
Chorus : Som Bahadur, Mridul Talwar, Navneet, Sarah and Jaideep

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## Message from the Chair



The year 2022-2023 continued to be a meaningful period of discovery, innovation and progress for Science City. We created insightful and immersive exhibitions, inspired young minds to think like a scientist and reached out to more people than ever before.

As always, we continued to popularize science in a Mission Mode, building scientific temper and supplementing formal science education through non-formal means with an objective to simplify science for the general public and students by explaining complex scientific concepts through interactive exhibits and extra-curricular activities and spread the message that science can be fun.

One new gallery (Mission Tandrust Punjab) was opened to public, One gallery (Electricity Gallery) & a theatre (Spark Theatre) was completed, 126 scientific events/activities were organized including a joint International Conference and we reached out to > 14,000 people with our programs. Further, around 3.53 lakh visitors visited PGSC during the year. We are changing, trying to be better and improving and always in motion.

PGSC also undertook a 22 day campaign on Biodiversity at the call of the United Nations Convention for Biological Diversity. Considering the importance of Biodiversity in the global and local economy and the need of citizen action for its conservation, “22 days 22 actions” was undertaken from 1st to 22nd May, 2022 by organizing a series of field and online activities involving Nature and SD-ASK Clubs from 25 educational institutions from school and higher education sector representing both, rural and urban areas. Our efforts were recognized by National Biodiversity Authority as well as shared with the UN Biodiversity Portal.

Some other major events organized during the year were: North Regional Indian Young Inventors & Innovation Challenge; All Breed Animal Biodiversity Show, Flower show, Food & Nutrition Show & Mission LiFE-Lifestyle for Environment- an international mass movement towards “mindful and deliberate utilization, instead of mindless and destructive consumption” to protect and preserve the environment besides celebration of science, technology and environment related days. The SD-ASK program launched by PGSC, in collaboration with UNDP SDGCC-Punjab, is also running successfully with participation of 43 clubs across Punjab. It gives me immense pleasure, as well as a sense of pride, seeing so many schools and other educational institutions getting connected with us through our several outreach activities/programmes.

Further, the Women Technology Park project has been completed successfully, benefiting >500 women not only from surrounding areas of PGSC but also from other districts across Punjab [Sangrur, Gurdaspur, Bathinda, Taran Taran, Patiala, Ferozpur, Pathankot, Jalandhar, Mohali, Sri Muktsar Sahib, Ropar(Rupnagar), Moga] through Department of Rural Development and Panchayats, Govt. of Punjab.

Science is all around us. Technology is continually improving and changing our lives. These advances are transforming our world at a rapid rate, and our future will surely be filled with leaps in innovation we can now only imagine. At Pushpa Gujral Science City, we understand that being science literate is a necessity in today’s society. The significance of science in our world is prevalent, and this year we continued to prove that science has no boundaries.

**We believe that science, technology and innovation can create a more curious, creative and resilient world. By serving as a vibrant hub of innovative and accessible science education, we are helping to build a better future for society and our planet. The work we do is more vital than ever, and it requires more creativity and innovation than ever before.**

**Dr. Neelima Jerath  
Director General**



# Vision

To be an institution of excellence to inculcate scientific temper and nurture creativity especially in the young minds.

# Mission

To be a place for :

- Education: Creating Avenues for non-formal learning of Science & Technology.
- Developing a knowledge Society: Offering everyone – children and adults, general public and students – opportunities to experience every day science in our lives its well equipped resource centres.
- Demonstration: Explaining complex scientific concepts and emerging technologies in a simplified way.
- Information: Dissemination on the latest developments in science and technology.
- Innovation: Providing opportunity to individuals to think 'out of box' and try out their ideas in the design and development of new products.
- Edutainment: To learn through hands-on experience, fun and entertainment.

# Objectives

- To build scientific temper among the general masses and to develop an informed and knowledgeable society.
- To supplement formal science education, create excitement among students about science & technology and enthuse them to take up careers in science & technology.
- To promote creativity and innovation among the young generation.
- To promote education for sustainable development.



# Things to Do & See

## **Large Format Film Theatre:**

Science City hosts a Large Format Film Projection System. It is housed in a dome, which is distinctive outside as well as inside. On the outside, it is covered with 25 lakh computer-designed tiles of one square inch each and looks like a giant globe. Inside, it has a large format film theatre with a 23-metre diameter screen (10 times larger than a 35 mm screen) which provides an immersive experience.

## **Digital Planetarium:**

The most amazing experience is to see the night sky, and a guided tour through the planets & constellations through multi-channel digital planetarium system .

## **Virtual Expeditions (Flight Simulator):**

Another activity which causes an adrenaline rush, is a three-minute ride in a 30-seater flight simulator. It feels as if one is zooming through the stars in an alien universe or making death-defying leaps on a roller coaster.

## **Climate Change Theatre:**

It is a unique experience-filled theatre showing synchronized videos on two screens- flat and dome shaped and illuminating the static and moving fibre glass objects along with special light and sound effects, as the video displays storyline of the film.

## **Life Through the Ages:**

The panorama takes you on an amazing journey through the history of life, provides an insight on how the Earth and life on it has evolved. The Panorama displays the major events from Origin of Earth-Big Bang, Origin of Life, Unicellular animals/plants to Multi cellular animals/plants, Dinosaurs and prehistoric man to modern man.

## **Dinosaur Park:**

One of the biggest Dinosaur Parks, it has Life size dinosaurs, 44 in number of different eras in an island surrounded by a water body. Also meet 6 Robotic Dinosaurs with movements and special sound effects placed under a volcano as well as a moving dinosaur.

## **State level Energy Education & Awareness Park:**

This Park demonstrates uses of various forms of non-conventional energy sources such as Solar energy, Hydel energy, Wind energy, Bio energy etc. 20 KW energy is generated through Solar Energy to run all the exhibits in the Energy Park.

**Virtual 3-D Show:**

Here, visitors see the objects flying out of the screen coming in every direction; creepy characters reaching out to grab you giving a feeling that you are a part of the action.

**Indoor Laser Show:**

This laser show takes visitors to the wonderland where one would experience sudden shots of fog with mind-boggling sound and laser beams.

**Earthquake Simulator:**

30-seater Earthquake Simulator provides visitors a realistic experience of being in an earthquake. The computer-controlled simulator demonstrates how much a city will shake and heave if there is an earthquake measuring say 5, 6, 7 or 8 on the Richter Scale.

**Amazing Living Machine (Health Gallery):**

The gallery deals with various aspects of the human body from embryonic to full body development, aging and demonstrating anatomy, physiology, diagnostics and genetics through interactive and attractive exhibits. The star attractions of the gallery are: Transparent Man theatre, walk through Giant Heart, CT Scanner, Operation theatre, Countdown to Birth, and various other interactive exhibits.

**Fun Science Gallery:**

70 assorted interactive exhibits designed, structured and clustered on the basis of basic fundamental science themes reflecting upon principles of mechatronics, optics and sound in the most engaging and interactive manner

**Mathematics Gallery:**

The Gallery helps students understand Maths in a fun and interesting way through interactive exhibits and hands on activities. It is divided in to different sections like Number system, Geometry, Arithmetic's, Trigonometry, Interactive math, puzzles and activities corner.

**Virtual Reality & Cyber Space Gallery:**

This gallery consists of awe-inspiring sections like Cyber Space, Virtual Reality Shadow Control, and Virtual Game Stations.

**Ames Room and Gallery of Illusions:**

Set up in the gallery of Illusions, Ames room creates an optical illusion in which people appear as dwarfs or giants when moving from one corner to the other. It was invented by American scientist Adelbert Ames, Jr. in 1946 to screw the brain. The gallery also takes you through a vortex, spinning your brain cells in a make - believe environment.



### **Mission Tandrust Punjab Gallery:**

The gallery displays all the 10 submissions of Mission Tandrust Punjab through interactive exhibits, MultiTaction table/ kiosk, audio-visuals, transslides and educational/Information panels.

### **Space & Aviation Gallery:**

The gallery displays cut-view models of satellites and various applications of space technology. The major constituents of the gallery are: Astronomy - our Universe; Solar System; Satellites launching Vehicle, Living in space etc.

### **Science of Sports:**

The Gallery is an ideal place to understand science behind various sports through playful and non-formal approach. The gallery intends to familiarize the visitors with the applications of scientific principles in sports - role of gravity, projectile motion, momentum, force, energy, impulse, Newton's Law of Motion, material used in sports equipment etc. and understanding of improving performance in sports.

### **Defence Gallery:**

Defence gallery consists of weapons and aircrafts that were used during World war- 2 and various other indigenously built aircrafts. The main attractions are Vijyanta Tank, Anti aircraft gun & aircraft MIG 23. A 2-seater Air Craft Swati LT-11 donated by the Govt. of Punjab to the Science City is also installed for giving sit-in experience to the visiting public.

### **Railway Gallery:**

Dioramas of technologically challenging and visually inspiring railway tracks have been set like Kalka-Shimla Railway track, Jammu- Srinagar railway link, the Bullet Train of Japan, Delhi Metro and principle of levitation used in high speed trains and engine simulator.

### **Bird Gallery:**

The gallery captures wide diversity of birds with models of national and state birds. A large banyan tree located in its centre displays commonly available birds species of the state mounted on it. This tree structure is surrounded by wetland diorama consisting models of species/varieties of flora and fauna available in state wetlands surrounded by replica of natural scenic beauty.

**Other galleries include, Biotechnology, Drug deaddiction, HIV/AIDS, etc.**





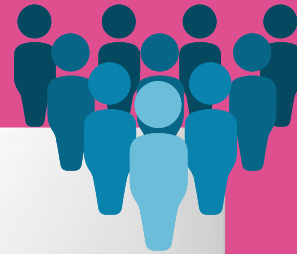
# Coming Soon Electricity Gallery & Spark Theatre



# 2022-23 at a glance

**TOTAL VISITOR**

**3,53,504**



**ON-LINE/ONSITE PROGRAMS**

**ONE NEW GALLERY OPENED**  
**Mission Tandrust Punjab**

**126**

**> 14,000 Participants**

**SCIENCE CITY'S ANTHEM LAUNCHED**

**NEW 3D FILM "DINO SAFARI" LAUNCHED**





# Review of Year 2022-23





## Mission Tandrut Punjab Gallery

Mission Tandrut is an initiative of the Government of Punjab to promote health and wellness. To take Mission objectives to the citizens, a gallery on the mission has been set up at PGSC. **Inaugurated by Hon'ble Secretary, Science, Technology and Environment, Govt. of Punjab on June 5, 2022**, the gallery displays all the 10 submissions of Mission Tandrut Punjab through interactive exhibits, MultiTaction table/ kiosk, audio-visuals, translides and educational/Information panels.



Learn about the ground and surface water quality of Punjab and water purification techniques, Know the ideal calorie value per meal by making your own plate through an interactive touch-based game, measure your BMI and know the impact of lifestyles on health, learn about various road safety signs on a moving translide and play interactive games to test your knowledge, get to know the real time Air Quality Index in various cities of Punjab, play a game to practice waste segregation and much more...

And

Do not forget to test your knowledge at our Quiz station and give your valuable feedback.



## Mukh Mantri Vigyan Yatra flagged off



Mukh Mantri Vigyan Yatra, a flagship program of Pushpa Gujral Science City exclusively for Govt. school students, was flagged off on 10.08.2022 by Sh. Gurmeet Singh Meet Hayer, Hon'ble Minister, Science, Technology & Environment, Govt. of Punjab, from Govt. Sr. Sec. School, Sandhupatti, Barnala. He flagged off 4 buses carrying 200 students to Science City. Secretary, Science, Technology & Environment, GoP; DG, PGSC; Dy. Commissioner, Barnala; Director, PGSC; SDM, Barnala and Senior Officers of Education Department of Barnala were also present at the occasion. **Hon'ble Minister also visited Science City after the flag off.**



**Hon'ble Minister Science, Technology & Environment, Sh. Gurmeet Singh Meet Hayer at Science City**

### VISIT OF GOVERNOR OF MIZORAM TO SCIENCE CITY



**Hon'ble Governor of Mizoram, Dr. Hari Babu Kambhampati visited the Science City**

Hon'ble Governor of Mizoram, Dr. Hari Babu Kambhampati visited the Science City on 18.07.2022. He appreciated various facilities set up at PGSC and emphasized that every State must have such places to make students learn science in fun and interactive manner.



### **New 3D film “Dino Safari” launched**

*Get on-board your jeep and enjoy a unique tour of our dinosaur reserve. You'll get within touching distance of a giant Diplodocus and the ferocious T-Rex as you travel through our jungle. But when disaster strikes and we have a major security breach... chaos reigns. Who will escape: you or the dinosaurs? Remember, keep your arms inside the vehicle at all times!*



**Sh. Vishesh Sarangal, IAS, DC, Kapurthala while launching the film "Dino Safari" at the occasion of National Science Day.**

### **Field Visits under Environment Studies:**

A mandatory course on Environment Studies has been introduced by UGC in all undergraduate classes which includes a mandatory Field visit to areas providing environmental information. Since PGSC has several facilities and exhibits on various aspects of environment which can cater to the requirement of the course, students from several universities /colleges visit PGSC under the compulsory course on “Environmental Studies”. In the year 2022-23, total 2773 students visited Science City under the programme.



# Days & Events

## 18th Founders Day celebration



### INNOTECH-2023 ( March 18-19 )

PGSC celebrated its 18th annual day by organizing INNOTECH-2023. More than 300 students from different Engineering & Polytechnic colleges of Punjab demonstrated their innovative models at this occasion. A team of experts from NIT Jalandhar (Dr. S.K Tiwari, Dr. Afzal Sikander, Dr. B.S Saini and Dr. Mahesh Kumar Sah) evaluated the models. The Founders Day address was given by Dr. Neelima Jerath, DG, PGSC. Dr. G Sridhar, Director General, Sardar Swaran Singh National Institute of Bio Energy was the Chief Guest.

"Innovation is the practical implementation of ideas that result in the introduction of new goods or services or improvement in them. Some of the key practical benefits of innovation are improved productivity, reduced cost, increased competitiveness, better brand recognition and increased turnover and profitability as the nation moves towards indigenization and self-sustainability. It is therefore, important to encourage youth to think out-of-box and keep them abreast of latest developments in various areas of science, technology and business."

Dr. Neelima Jerath, Director General, PGSC



"Innovation is a major driving force for a nation's sustainable growth and competitiveness amidst globalization. Innovative ideas by individuals lead towards making complex processes simple, easy and economical resulting in new products, technologies and opportunities and thus ensuring sustainable growth. The people of Punjab, especially in rural areas, are well known for their creativity and innovativeness. Suitable platforms, therefore, need to be provided to channelize the potential of Punjabi Youth to nurture their talent."

Dr. G Sridhar



The Science City Anthem was launched by Dr Neelima Jerath, Director General, at the occasion. The lyrics of the anthem are composed by her, whereas the music is composed by Sh. Parduman Kumar, Nagma Player from HMV College, Jalandhar.





## International Conference on Sustainability Education (ICSE): Parallel Session organized by PGSC

PGSC conceptualized and organized a session on "Promoting Innovations to achieve Sustainable development" in the International Conference on Sustainability Education (ICSE) in collaboration with Mobius Foundation, UNESCO, UNEP (United Nations Environment Programme), Centre for Environment Education, TERI, Foundation for Environment Education, Climate Reality Project, etc. on 10.09.2022 at New Delhi.

The session was chaired by Prof. Anil Gupta, Prof. IIM Ahmedabad, Member-National Innovation Foundation, Founder of Honey Bee Network, SRISHTI and Moderated by Dr. Neelima Jerath, DG, PGSC.

The key Speakers and their topics were:

- i) Ms. Huma Abidi, **Sr. Director**, Artificial Intelligence SW Products and Engineering, **INTEL Corporation**, Cupertino, California, USA spoke on "AI & Sustainability".
- ii) Mr. Prateek Deshmukh, **Lead ATL**, **Atal Innovation Mission**, **NITI Aayog**, Delhi gave in-depth overview of AIM programs.
- iii) Ms. Mita Goswami, **ESD Expert**, **SWISS Agency for Development and Cooperation**, **Mongolia** shared international (Drobak Montessori School, South East Norway) and Indian (Swaraj School) examples about sustainability education.
- iv) Ms. Sharda, Kamla Nehru Public School, Kapurthala, Punjab presented her ideas on Sustainability Education and how their school is practicing sustainability in its premises by involving every student in creative hands-on activities.



## INTERNATIONAL BIODIVERSITY DAY-2022

At the call of UN Biodiversity PGSC took up a 22 Day 'Campaign on Biodiversity' on "22 actions: 22 days" as suggested by the Convention for Biological Diversity. A series of field and online activities including talks by experts from leading National/International organizations like, UNDP; UNEP; National Biodiversity Authority, GoI; National Bureau of Animal Genetic Resources (NBAGR-Karnal); National Academy of Agricultural Sciences; WWF-India; TERI; Centre for Environment Communications, etc, were invited. Various activities like, restoration, cleaning of ponds / parks; nursery raising; bird watching; nature trails; biodiversity games; waste collection, segregation and management; competitions on photography, poster making and energy audit; film shows followed by discussion with expert on key messages in the films; discussion forums, etc. were organized from May 01-22, 2022. The campaign involved, 25 educational institutions and participation of > 1500 students. It was technically supported by National Biodiversity Authority, GoI & financially supported by East-West Seed India Pvt. Ltd.

The final celebrations were held on 22.05.2022 with Secretary, Department of Science, Technology and Environment, GoP as Chief Guest, who gave a special message. Ms. Gaytri Raghwa, UNEP - Environment Education Consultant, delivered the key note address. Dr. Neelima Jerath, DG, Science City and Sh. Girish Patil, Research Director, East West Seeds Pvt. Ltd. also addressed the students. Best 3 Institutions were awarded and 6 institutions received appreciation. Winners of individual competitions were also awarded. The programme was widely covered by print and social media.

While most of us do not intend to harm biodiversity intentionally, however, many of our actions, including intensified agriculture, deforestation, encroachment of habitats and acceleration of climate change, have pushed nature beyond its limits. Research indicates that the biodiversity sector contributes to about 40 trillion Rupees and >10 million jobs annually to the global GDP. Hence, the need to take immediate positive action to conserve our biological resources.



Sh. Rahul Tewari, SSTE, GoP



Every country has a sovereign right on its biological resources and it is the duty and responsibility of its citizen to conserve, sustainably use and ensure equitable sharing of benefits arising out of commercial and noncommercial use of these resources.

Dr. Neelima Jerath, DG, PGSC

Biological resources and the Biological Diversity Act, 2002, provides for conservation, sustainable use and equitable sharing of benefits of these bio-resources. The Access and Benefit Sharing mechanism enables fair distribution of these benefits between users and providers of bio-resources for commercial benefit.



Mr. Justin Mohan, Secretary, NBA, GoI



Celebration of the IBD 2022 provides an opportunity to raise awareness and action towards the contribution of biodiversity to maintain our food and health. SDG guidelines provide technical guidance to policy makers, decision makers and managers with responsibilities covering food and health situation in developing countries as well as in developed world.

Gaytri Raghwa, UNEP - Environment Education Consultant





## **WORLD HEALTH DAY (APRIL 7)**

World Health Day is celebrated on April 7 every year. It is an initiative taken by the World Health Organization (WHO) to raise awareness about the overall health and well-being of people across the world. A webinar was organized by PGSC at this occasion. The theme for this year celebration was "Our Planet, Our Health". Dr. Anjali Arora, Associate Professor, Department of Community Medicine, Punjab Institute of Medical Science, Jalandhar was the key speaker. She delivered a talk on "Our food, Our planet".

## **WORLD HERITAGE DAY (APRIL 18)**

Each year World Heritage Day is celebrated to spread awareness about preserving the history, diversity, and vulnerability of world heritage sites and monuments. This special day marks an understanding of our rich culture and traditions that are worth conserving. The day is celebrated to convey an important message to the younger generations to carry forward our legacy and safeguard our culture. It also intends to recognize the efforts of all people like architects, engineers, geographers, civil engineers, artists and archaeologists, who contribute towards conserving the heritage. Science City organized a webinar on "Culture and Heritage of Punjab" at this occasion. Sh. Ashni Kumar, PRO, Science City was the resource person.

## **FLOWER SHOW (APRIL 10)**

To celebrate and raise awareness on floral diversity, PGSC organized a Flower show. Various competitions like Floral Rangoli Making Competition, Flower Arrangement Competition (Dry and Fresh) and Potted Flower Competition were conducted. Moreover, Cultural Programme like Gatka, Bangra and Gidha were performed by the students. About 264 people (students and general public) participated in the show.



## WATSON AND CRICK DNA MODEL COMMEMORATION DAY (APRIL 25)

The goal of National DNA Day is to offer students, teachers and the public an opportunity to learn about and celebrate the latest advances in genomic research and explore how these advances might impact their lives. PGSC organized a webinar at this occasion on "The Blueprint of Life". Dr. Anjana Munshi, Professor, Department of Human Genetics and Molecular Medicine and Dean Research, Central University of Punjab, Bathinda was the resource person.



**Dr. Anjana Munshi**  
Central University of  
Punjab, Bathinda

## NORTH REGIONAL INDIAN YOUNG INVENTORS & INNOVATION CHALLENGE (APRIL 22)

A North Regional Indian Young Inventors & Innovation Challenge was organized by Pushpa Gujral Science City in collaboration with Punjab State Council for S & T. The program was catalysed by Network of Organizations for Science & Technology communication (NOSTC) and supported by National Council for Science, Technology Communication (NCSTC), DST, GoI. The main objective of this program was to attract Young Inventors to present their innovative ideas and display their project models.

Around 25 students selected from various states of the Northern region, viz. Jammu & Kashmir, Himachal Pradesh, Haryana, Punjab, Chandigarh and Delhi presented their ideas in three categories, i.e Cub, Juvenile and Youth.

Er. Anuj Sinha former Director, Vigyan Prasar, Noida and Head, NCSTC, DST, GoI, New Delhi was the Chief Guest at this occasion. Delivering inaugural address, he emphasized upon the importance of Science, Technology and Innovation in addressing the problems of the society. He said that best brains are trained to solve real life problems using science find great satisfaction and earn gratitude of the common man.



## **WORLD INTELLECTUAL PROPERTY DAY (APRIL 26)**

World Intellectual Property Day is an opportunity for youth to find out how intellectual property (IP) rights can help transform their ideas into reality, generate income, create jobs and make a positive impact on the world around them. Science City, in collaboration with Punjab State Council for Science and Technology, Chandigarh, celebrated the day by organizing a webinar. The theme of this year celebration was “IP and Youth: Innovating for a Better Future”. Dr. Balwinder Singh Sooch, HOD, Biotechnology and Deputy Coordinator (IPR), Punjabi University Patiala was the key speaker at this occasion. He delivered a talk on ‘IPRs for budding innovators and start-ups’. During the session, he enlightened young innovators about the scope of protection of their inventions, designs, trade names and other items under the Indian IP regime and related legal provisions. Dr. Minni Singh, Associate Prof, Department of Biotechnology, Punjabi University, Mr. Charanjit Singh, Cad Application Engineer and Mr. Vanjarapu Sai Teja QA/QC & NDT Engineer, former Incubatee of GNA University, shared their experiences of commercializing their ideas at the occasion.



**Dr. Balwinder Sooch**



**Dr. Minni Singh**



**Charanjit Singh**



**Vanjarapu Sai Teja**



**Ms. Sonia Dosanjh**

## **NATIONAL TECHNOLOGY DAY (MAY 11)**

National Technology Day is celebrated on 11th May in India, to celebrate the achievements made by the scientists, engineers, teachers and researchers across the nation. This day reminds the people about the scientific advancements made by the people of our nation. Science City celebrated the day by organizing a webinar on “Emerging Trend in Artificial Intelligence”. Ms. Sonia Dosanjh, Joint Director and Head of Artificial Intelligence & Analytics Department, C-DAC Mohali was the key speaker at the occasion. She briefed the audience on latest technology developments in the field of AI. She apprised how AI is now being widely recognized to be the power that will fuel the future global digital economy; and has gained geo-strategic importance.

## **WORLD MIGRATORY BIRD DAY (MAY 14)**

World Migratory Bird Day is an annual awareness-raising campaign highlighting the need for conservation of migratory birds and their habitats. It has a global outreach and is an effective tool to help raise global awareness of the threats faced by migratory birds, their ecological importance, and the need for international cooperation to conserve them. Science City celebrated the day by organizing a webinar on "Birds connect our world". Dr. Bitapi C Sinha, Advisor/Scientist –G, Wildlife Institute of India, Dehradun was the key speaker at the occasion.



**Dr. Bitapi C Sinha**  
Wildlife Institute of India, Dehradun

## **INTERNATIONAL MUSEUM DAY (MAY 18)**

International Museum Day (IMD) is celebrated to highlight the importance of museums in any culture. PGSC organized a webinar on the theme "The Power of Museums" to celebrate this day. Dr. Jayanta Sthanapati, Former Deputy Director General, NCSM was the key speaker at this occasion. Delivering his talk, he said that inadequate science literacy and gap in knowledge of common people needs to be bridged where Science Centres can play a crucial role. Sh. G.S Rautela Former DG, NCSM was also present at this occasion



## **NATIONAL DENGUE DAY (MAY 16)**

National Dengue Day is observed to spread awareness about the vector-borne disease and its preventive methods. A webinar on "Dengue Awareness, Prevention and Control" was organized by PGSC. Dr. Rajiv Arora, Director Principal, Punjab Institute of Medical Sciences, (PIMS), Jalandhar and Dr. Sheevani Sheemar, Professor, Department of Microbiology, Punjab Institute of Medical Sciences, (PIMS), Jalandhar were the resource persons.



**Dr. Jayanta Sthanapati**

## **NATURE PHOTOGRAPHY DAY (JUNE 15)**

Nature Photography Day is observed to promote the enjoyment of capturing nature in the lens. The day is also celebrated to explain how images can be used to advance the cause of conservation and protect plants, wildlife and landscapes both locally and globally.

Science City celebrated the day by organizing an exhibition on “Nature Photography” to create awareness and motivate general masses about the Nature. Photographs by renowned photographer Sh. Karmvir Singh Sandhu and Mr. Sarbjit Pandher were exhibited at this occasion.



## **INTERNATIONAL YOGA DAY (JUNE 21)**

An online session on “Three minutes of Scientific Yoga” was organized by Science City at the occasion of International Yoga Day. The main objective of the program was to learn a holistic approach to health and well-being of our body, mind, and spirit simultaneously. Expert Yoga practitioner Col. Sewa Singh was the resource person at this occasion.

## **WORLD DAY TO COMBAT DESERTIFICATION & DROUGHT (JUNE 17)**

The World Day to Combat Desertification and Drought is observed every year to promote public awareness of international efforts to combat desertification. The day is a unique moment to remind everyone that land degradation neutrality is achievable through problem-solving, strong community involvement and co-operation at all levels. PGSC organized a webinar on "Interpreting Desertification" from remote sensing satellite images" at this occasion. Dr. Pratap Chandra Moharana, Principal Scientist, ICAR-Central Arid Zone Research Institute Jodhpur, Rajasthan was the resource person.



**Dr. Pratap Chandra Moharana  
ICAR-Central Arid Zone Research  
Inst. Jodhpur**



**Col. Sewa Singh**

## INTERNATIONAL DRUG ABUSE DAY (JUNE 26)

The International Day against Drug Abuse and Illicit Trafficking, or World Drug Day, is celebrated to strengthen action and cooperation in achieving a world free of drug abuse. The theme for this year celebration was “Addressing drug challenges in health and humanitarian crisis. Science City organized a webinar on “Drug Abuse and Treatment: Punjab Scenario”. Dr Sandeep Bhola, Deputy Medical Commissioner, Kapurthala was the key speaker at this occasion.



**Dr Sandeep Bhola**

## VAN MAHOTSAV

Van Mahotsav is an annual one-week program on dissemination of information on importance of trees in India which is celebrated in the first week of July. A webinar on “ Scope and potential of commercially importance medicinal and aromatic plants” was organized by PGSC on July 4, 2022. The primary objective of Van Mahotsav week celebration is to bring awareness on the environmental issues and educate masses about the need of planting trees as these are one the best solution to control global warming. Dr. Meenu Sood, Professor and Head, College of Forestry, Y.S Parmar University of Horticulture and Forestry, Nauni, Solan was key speaker on this occasion. She delivered a special talk on importance of medicinal and aromatic plants to highlight their benefits in health and well-being of people. She informed that medicinal plants have long been used in traditional medicine and ethnomedicine around the world. Aromatic plants, grown for their aroma and flavor, are also used to treat ailments.

## INTERNATIONAL YOUTH DAY (AUGUST 12)

International Youth Day is celebrated annually on 12 August to bring youth issues to the attention of the international community and celebrate the potential of youth as partners in today’s global society. A talk on the theme “Intergenerational solidarity: creating a world for all ages” was organized. Dr Nirmal Jaura, Former Director, Youth Welfare, Panjab University, Chandigarh was the key speaker.



## Azadi ka Amrit Mahotsav celebrations

Pushpa Gujral Science City celebrated 75th Independence Day and Azadi ka Amrit Mahotsav at Science City Campus on 15.08.2022. At this occasion, a Cultural program (Talk on “Contribution of Science in India’s Development”, Poem, Patriotic song, Gidha, and Bhangra, etc.) involving participation of students from nearby Government and Private schools and PGSC staff was organized.



### NPCIL-DAE ICONIC WEEK

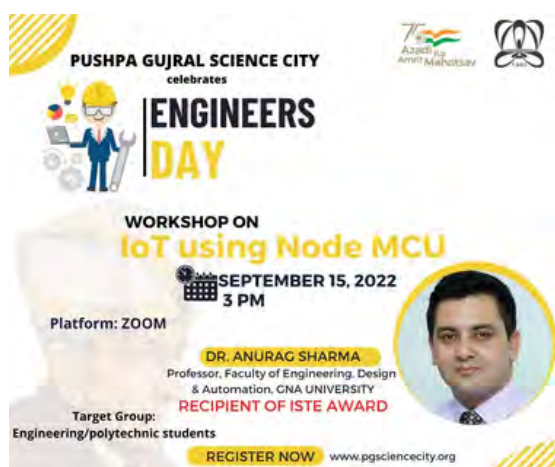
Science City celebrated Azadi ka Amrit Mahotsav in collaboration with Nuclear Power corporation of India Ltd.(NPCIL) by organizing a talk on “Nuclear Energy Safe Energy” and Drawing and Poster making Competitions on August 24 by involving participation of 75 students and teachers from 7 SD-ASK clubs set up in schools across Punjab. The event was celebrated to commemorate 75 years of progressive India. Mr. Gaurav Kaloniya, Scientific Officer ‘E’, NPCIL was the speaker at this occasion. He delivered a talk on “Nuclear Energy Safe Energy”.





## NATIONAL ENGINEER'S DAY (SEPTEMBER 15)

National Engineer's Day is celebrated to recognize and honour the achievements of the great engineer Mokshagundam Visvesvaraya. PGSC celebrated the day by organizing an online workshop on Internet of Things (IoT). Dr. Anurag Sharma, Professor, GNA University was the resource person at this occasion. During the workshop, Dr. Sharma explained how a network of connected physical devices uses sensors and Application Programming Interface (API) to exchange data over network. Students learnt the fundamental concepts of cloud computing, wireless interfaces for data transfer & potential of IOT in real time applications.



## GREEN CONSUMER DAY ( SEPTEMBER 28)

The Green Consumer Day focuses primarily on awareness raising and the importance of recycling-reusing and reducing waste material. Dr. K Krishnamurthi, Chief Scientist & Head, Health and Toxicity Cell CSIR-National Environmental Engineering Research Institute, Nagpur was key speaker at this occasion. He delivered a special lecture on "Circular economy for sustainable Development".

## WORLD OZONE DAY (SEPTEMBER 16)

Pushpa Gujral Science City celebrated World Ozone Day in collaboration with Ministry of Earth Sciences, Govt. of India by organizing a webinar, Poster Making and Slogan writing competitions for school students.

The webinar was organized on "Ozone and Climate Change". Prof. S Ramachandran, Space and Atmospheric Sciences Div. Physical Research Laboratory, Ahmedabad, was the key speaker at this occasion. During his talk, he highlighted the importance, sources and sinks of ozone, causes of ozone depletion in the stratosphere and recovery of global ozone.



## INTERNATIONAL DAY FOR OLDER PERSONS (OCTOBER 1)

The United Nations General Assembly designated October 1 as the International Day of Older People on 14 December 1990. Since then, the day has been celebrated spanning over several thematic areas. The overall umbrella theme for the United Nations International Day of Older Persons-2022 was “Resilience of Older Persons in a Changing World.” To use science for empowerment of rural women, Internet usage training was provided to mark this occasion. 19 women from villages surrounding PGSC attended the programme.



## INTERNATIONAL DAY FOR DISASTER REDUCTION (OCTOBER 13)

The International Day Disaster Reduction-2022 focussed on Target G of the Sendai Framework: “Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030.” At this occasion, fire safety and fire fighting techniques were demonstrated at PGSC campus to >150 people (students and general public).



## CELEBRATION OF WILD LIFE WEEK

Wildlife Week is celebrated from the 2nd to the 8th of October every year in India. Wildlife Week was conceptualized in 1952 with a long-term goal to safeguard the lives of the endangered and threatened species of animals. This week is commemorated to increase awareness among the common masses regarding the role of wildlife in maintaining nature’s equilibrium. PGSC organized following activities to commemorate this week as under:

### World Habitat Day (October 3)

Dr. Gaurav Sharma, Scientist 'E' and Officer-in-charge, Northern Regional Centre, Zoological Survey of India (MoEFCC, GoI), Dehradun delivered an on-line talk on "Status of Faunal Diversity and their conservation in India".

### Bird Watching activity (October 5)

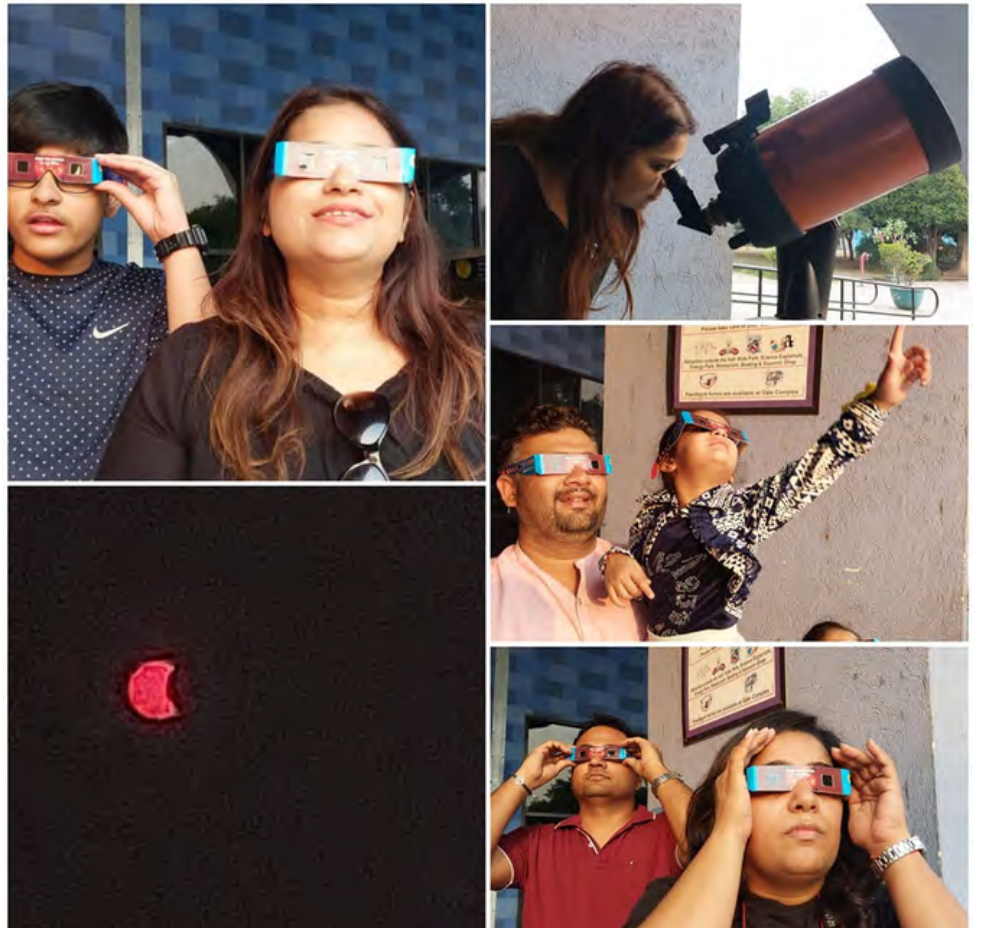
Bird watching for 27 students and 2 teachers from Shri Guru Hargobind Sr. Sec. School, Ferozpur was organized at PGSC Campus.

### Birds Nest Making activity (October 6)

PGSC organized Bird Nest Making activity for 20 students and one teacher from State Public School, Nakodar at its campus.



**Visitors watching partial solar eclipse on October 25- the last solar eclipse of the year 2022 at #PGSC**



## WORLD FOOD DAY (OCTOBER 15 )

World Food Day is observed annually on 16 October to highlight the millions of people worldwide who cannot afford a healthy diet and the need for regular access to nutritious food. The theme for 2022 was "Leave NO ONE behind". At this occasion, Dr. Kiran Bains, Professor and Head, Department of Food and Nutrition, Punjab Agriculture University, Ludhiana delivered an on-line talk on "A Healthy Diet is all about getting the right balance". About 100 students and teachers participated



"A healthy diet helps to protect against malnutrition in all its forms, as well as noncommunicable diseases (NCDs), including diabetes, heart disease, stroke and cancer."

Dr. Kiran Bains, Punjab Agriculture University

## GLOBAL DIGNITY DAY (OCTOBER 19 )

The third Wednesday of October recognizes Global Dignity Day. The initiative educates & inspires youth to help them better understand their self-worth. The theme of Global Dignity Day-2022 was self-respect, ambition, hard work, a feeling of accomplishment.

PGSC organized a Seminar on "Dignity through Science & Technology" at this occasion. Dr. Nakul Parashar, Director, Vigyan Prasar was the Chief Guest at the occasion. Dr. B.K. Tyagi, Former Scientist 'F', Vigyan Prasar delivered a talk. Around 250 students and teachers participated in the program. Caption contest was also organized and winners were awarded.

At this occasion, PGSC & Vigyan Prasar also signed a MoU for jointly organizing science communication/popularization activities.



"The accomplishment of dignified life for all must be the prime responsibility of humans and it would be possible if we use Science and its applications for the benefit of the society."

Dr. Nakul Parashar, Director, Vigyan Prasar



## Art in Science Competition

An “Art in Science” Competition was organized by PGSC involving participation of Fine Arts students from colleges and Sr. Sec. Schools. The prize distribution ceremony was held at PGSC on 19.10.2022.



**1st Prize**  
**Yangchan Dollker**  
**HMV College**



**2nd Prize**  
**Preeti Gupta**  
**HMV College**



**3rd prize**  
**Sanamdeep Singh**  
**SPPS convent school**

### SCIENCE FEST - 2022 ( NOVEMBER 19)

PGSC organized Science Fest 2022, an annual event to develop innovation and creativity among school students. A competition of Innovative projects / models was organized. 120 innovative projects /models were presented by students from class 7th to 12th. Cash prizes ranging from Rs.5,000/- to Rs.500/- were awarded to the winners. The Jury comprised experts from Thapar University, NIT, Jalandhar and GNA University. Some of the projects were selected by NIT Jalandhar for further mentoring.



## **ENTREPRENEURSHIP DEVELOPMENT PROGRAMME (NOVEMBER 22)**

GNA University Technology Business Incubator and PGSC jointly organized Entrepreneurship Development Program for school children at PGSC Campus, Kapurthala. Mr. Paramjit Singh, Director, Regional Centre for Entrepreneurship Development was the keynote speaker. The prize distribution ceremony of Science Fest was also held. Dr. V.K. Rattan, former Dean, Panjab University and presently Vice Chancellor, GNA University, was the Chief Guest at the prize distribution ceremony .



## **WORLD AIDS DAY (DECEMBER 12)**

World AIDS Day, designated on 1 December every year since 1988, is an international day dedicated to raising awareness of the AIDS pandemic caused by the spread of HIV infection. PGSC has an HIV/AIDS gallery. At the occasion of World AIDS Day, a special guided tour of the Gallery was organized.



## **NATIONAL POLLUTION PREVENTION DAY (DECEMBER 12)**

National Pollution Prevention Day is observed in India on December 2 every year. The main objective of this day is to raise awareness about pollution control measures and the prevention of industrial disasters. At this occasion, Dr. R.K. Setia, Scientist E, Punjab Remote Sensing Centre, Ludhiana delivered a talk on “Use of remote sensing to assess Crop Residue Burning: Impacts on Soil Health, Air Quality and Human Health”.



**Dr. R.K. Setia**  
Punjab Remote Sensing Centre,  
Ludhiana

## NATIONAL ENERGY CONSERVATION DAY (DECEMBER 14)

The need for energy resources is expanding along with the world's population. Energy Conservation Day is a reminder that we can no longer go easy with our energy sources and must conserve them. At this occasion, Dr. G. Sridhar, Director General, SSS-NIBE, Kapurthala delivered a talk on "Role of Renewable Energy for Sustainable Development".



Dr. G. Sridhar, SSS-NIBE



Er. Parambir Singh Malhi, GNDU

## WEBINAR ON ECO-FRIENDLY TEXTILES (DECEMBER 16)

Er. Parambir Singh Malhi, Department of Apparel and Textile Technology, GNDU, Amritsar delivered a talk on "Eco-friendly textiles". Er. Malhi talked on What are Eco-friendly textiles, why should we care and how can we be involved?

## NATIONAL MATHEMATICS DAY (DECEMBER 22)



National Mathematics Day is celebrated on 22 December every year to mark the birth anniversary of legendary Indian mathematician, Srinivasa Ramanujan. At this occasion, PGSC organized workshop. Mr. Kirandeep Singh, Educationist, Founder of Mathematical Hub, (first ever in Punjab), recipient of State Award 2016 and National Award 2017, interacted with the students and demonstrated the complex concepts, viz. Algebra formulas, fractions, calculation tricks and trigonometry in an easy way with the help of working models, math kits and games. Students were also taken to the Mathematics gallery at Science City wherein they were demonstrated various concepts of mathematics through interactive exhibits .



## CELEBRATION OF REPUBLIC DAY ( JANUARY 26 )

Pushpa Gujral Science City celebrated 74th Republic Day at its campus. A General Quiz competition was organized jointly with National Institute of Technology, Jalandhar involving participation of >300 students from 31 Government and Private schools from all over Punjab. Cash prizes, sponsored by Xovian, Kendel Innovations, Career Vyas, Antriksh and NIT Jalandhar (1st Prize: Rs 10,000/, 2nd & 3rd Prizes: Rs 5,000/- each), were awarded to the winners.



## NEWTON'S DAY ( JANUARY 4 )



A talk on “Newton and his works” and hands-on activity was organized to commemorate the birthday of Sir Isaac Newton, an English mathematician, physicist, astronomer, alchemist, theologian, and author. Newton formulated the laws of motion and universal gravitation that formed the dominant scientific viewpoint for centuries until it was superseded by the theory of relativity. Newton used his mathematical description of gravity to derive Kepler's laws of planetary motion, account for tides, the trajectories of comets, the precession of the equinoxes and other phenomena, eradicating doubt about the Solar System's heliocentricity. 25 students attended.

## BIRTHDAY OF HARGOBIND KHORANA ( JANUARY 9 )



A talk on “Life and contribution of Hargobind Khorana” was organized to commemorate his birthday . Dr. Khorana was an Indian-American biochemist. He shared the 1968 Nobel Prize for Physiology or Medicine with Marshall W. Nirenberg and Robert W. Holley for research that showed the order of nucleotides in nucleic acids, which carry the genetic code of the cell and control the cell's synthesis of proteins. A short film on his research projects was also shown. 50 students attended.



## DOMESTICATED ANIMAL BIODIVERSITY (DOG) SHOW (JANUARY 29)

An Exhibition on domesticated faunal diversity and 15th & 16th All Breed Dog show was organized jointly with Kennel Club of India (KCI). The objective was to highlight the importance of domesticated animal diversity. A team of prominent international judges, comprising Azim Farooqui from Pune, Kasim Ali Khan from Hyderabad and Adarsh Chibber from Kotkapura, judged dogs during the show.

155 dogs of > 40 breeds such as German Shepherd, Labrador Retriever, Doberman Pinscher, American Bulldog, Boxer, Great Dane, Rottweiler, among others, and more than a thousand dog lovers participated in the event.



## STEPHEN WILLIAM HAWKING'S BIRTHDAY (JANUARY 8)

Stephen Hawking was an English theoretical physicist, cosmologist, and author whose scientific works included a collaboration with Roger Penrose on gravitational singularity theorems in the framework of general relativity, and the theoretical prediction that black holes emit radiation, often called Hawking radiation. In 1963, at age 21, Hawking was diagnosed with an early-onset slow-progressing form of motor neuron disease that gradually, over decades, paralysed him. After the loss of his speech, he communicated through a speech-generating device initially through use of a handheld switch,

and eventually by using a single cheek muscle. A talk on "Life and achievements of Stephen William Hawking in the field of science" was organized at the occasion of his birth anniversary. Hawking was the first to set out a theory of cosmology explained by a union of the general theory of relativity and quantum mechanics. He was a vigorous supporter of the many-worlds interpretation of quantum mechanics. 151 students and teachers attended.

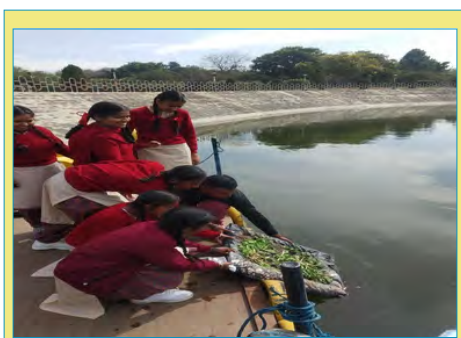
## BIRTHDAY OF BENJAMIN FRANKLIN (JANUARY 17)

PGSC organized an expert talk to commemorate the birthday of Sir Benjamin Franklin, an American polymath who was active as a writer, scientist, inventor, statesman, diplomat, printer, publisher, forger and political philosopher. Dr. Harvinder Kaur Jassal, Associate Professor, Physical Sciences, Indian Institute of Science Education & Research (IISER), Mohali delivered a talk on “The World of Galaxies”



## WORLD WETLANDS DAY (FEBRUARY 2)

World Wetlands Day is celebrated on the second day of February every year. Dr. Himender Bharti, Director, Centre for Restoration of Ecosystem in Punjab, Punjabi University, Patiala delivered a talk on “Anthropocene: Where do we stand in terms of Ecological Restoration.” During his talk, he highlighted that the current ecological crisis is the outcome of various threats, which include habitat destruction, habitat fragmentation, habitat degradation, overexploitation of biological resources, spread of invasive species, pollution, diseases, and global climate change. At this occasion, Poetry competition was also organized. >200 students participated. Artificial islands were also released by school students in Science City water body to provide spawning habitat for aquatic birds.



## WORLD CANCER DAY (FEBRUARY 4)

World Cancer Day is an international day marked on 4 February to raise awareness of cancer and to encourage its prevention, detection, and treatment. Dr. Parmeet Kaur, Chief Dietician, Department of Dietetics, AIIMS, New Delhi delivered a talk (on-line) on “Diet and Cancer”.

## WORKSHOP ON LOW COST TEACHING AIDS (FEBRUARY 8)

In the workshop, various low cost activities like, concept of pressure, Newton disc, how to make fan with plastic bottles, Bernoulli principle, momentum, etc. were conducted.

## B'DAY OF THOMAS ALVA EDISON (FEBRUARY 13)

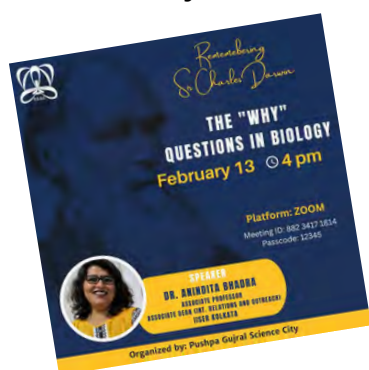
A talk on "Life and Inventions of Thomas Edison" was organized to commemorate the Birth Anniversary of Thomas Alva Edison, an American inventor and businessman.

## STEVE JOBS B'DAY (FEBRUARY 24)

A talk on 'Biography and achievements of Steve Jobs' was organized at PGSC to commemorate the birth Anniversary of Steve Jobs. He was the co-founder, chairman, and CEO of Apple and a pioneer of the personal computer revolution of the 1970s and 1980s.

## B'DAY OF CHARLES DARWIN (FEBRUARY 13)

Charles Darwin was an English naturalist, geologist, and biologist, widely known for his contributions to evolutionary biology. Dr. Anindita Bhadra, Associate Professor & Associate Dean (Int. Relations and Outreach), IISER Kolkata delivered a talk (on-line) on 'The "Why" Questions in Biology'.



## NATIONAL SCIENCE DAY (FEBRUARY 28)

National Science Day is celebrated in India on February 28 each year to mark the discovery of the Raman effect by Indian physicist Sir C. V. Raman on 28 February 1928. For his discovery, Sir C.V. Raman was awarded the Nobel Prize in Physics in 1930. The day was celebrated in collaboration with Punjab State Council for Science & Technology at PGSC campus. Expert Talk on "Entrepreneurship and Innovation" was delivered by Dr. Himesh Sharma, Advisor, Regional Centre for Entrepreneurship Development (RCED). A Declamation contest was also organized. Cash prizes were awarded to the winners. >250 students participated.



Dr. Neelima Jerath, DG, PGSC was invited by HMV College, Jalandhar to deliver expert talk at this occasion. Dr. Jerath spoke on "Global Science for Global Resources".

## INTERNATIONAL WOMEN'S DAY ( MARCH 8 )

PGSC celebrated International Women's Day in collaboration with Punjab State Rural Livelihood Mission, & ITC Mission Sunehra Kal, Manav Vikas Sansthan, Kapurthala on the theme "DigitALL: Innovation and Technology for gender equality". The rural women were made aware on how Innovation, Technology and Digital knowledge can help in achieving gender equality and women empowerment. At this occasion, DG, PGSC Dr. Neelima Jerath was invited by Sardar Swaran Singh Institute of Bio-Energy, Kapurthala to deliver an expert talk. She delivered a talk on "Women: Powering the Future".



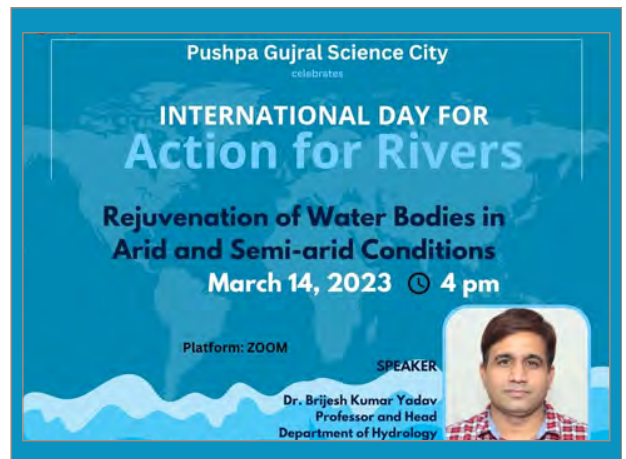
## INTERNATIONAL DAY OF ACTION FOR RIVERS ( MARCH 14 )

International Day of Action For Rivers, observed on March 14 every year, is a day that is dedicated to saving, celebrating, and creating awareness about the importance of rivers. Dr. Brijesh Kumar Yadav, Prof. & Head, Department of Hydrology, IIT, Roorkee, delivered a talk on "Rejuvenation of Water Bodies in Arid and Semi-arid Conditions".



## WORLD FORESTRY DAY ( MARCH 21 )

The day is observed worldwide to increase awareness about the importance of forests, woodlands, and trees in our lives. It is important to understand the value, significance, and contributions of the forests to balancing the life cycle on earth. Tree plantation was done by PGSC at Lyallpur Khalsa College, Kapurthala. 85 students participated.



## MISSION LIFE PROGRAM OF NITI AAYOG AND WORLD WATER DAY (MARCH 22)

Pushpa Gujral Science City in collaboration with Punjab State Council for Science & Technology (PSCST) (catalysed and supported by MoEFCC, GoI) organized the following programs under Mission LiFE:

- Expert Talk on “Mission LiFE and Circular Economy - Waste Management” by Dr. Naresh Bhardwaj, Assistant Director, PMIDC, Department of Local Government, Punjab
- Street Play Competition (theme “Lifestyle for Environment”)
- Poster Making Competition (theme “Pro Planet”)
- Green Quiz on Environment Economy and Water



World Water Day-2023 was also celebrated. 231 students participated. Cash prizes were awarded to the winners. An exhibition on Mission LiFE was also displayed by PGSC.

## Food and Nutrition Show under Mission LiFE and International Year of Millets ( March 26)

The show was organized under the following themes:

- Health & Traditional Food
- Food from Millets

Competitions on traditional recipes and millet based recipe were organized for students of Hotel Management Colleges/ Institutions / Schools and Amateurs. 104 students / public participated and shared their recipes. The judgement was made by Executive Chef, ITC Fortune Hotel, Jalandhar and HoD, Hotel Management, Lovely Professional University, Phagwara. Cash Prizes were awarded to the winners.



## **WORLD SPARROW DAY ( MARCH 20 )**

To raise awareness about house sparrows and other common birds affected by the environment, an Expert talk & demonstration on nest making was organized for school students by PGSC. 48 students participated.



## **DOMESTICATED FLORAL BIODIVERSITY - FLOWER SHOW ( MARCH 25 )**

To celebrate and raise awareness on floral diversity, PGSC organized a Flower show. Various competitions like Floral Rangoli Making, Flower Arrangement (Dry and Fresh) and Potted Flower Competition were conducted. Gatka show was also organized. About 146 students and teachers participated in the show. This event gave an opportunity to the visitors to appreciate floral biodiversity.



## From the Innovation Hub



### **WORKSHOP ON SCIENCE BEHIND VIBRATION (26.04.22 & 28.04.22)**

In these workshops, the students learned the concept of sound and vibrations. During the practical session, students designed their own hand made toys, like, a dancing man that works on the principle of vibration. Under the guidance of mentors, each student learned to see the presence of vibration around them and the art to make the low cost science toy from trash. 45 students participated in these two workshops.

### **WORKSHOP ON ELECTRONIC SENSORS(16.06.22)**

In this workshop, the students were taught basic concepts of sensors and their working. An introduction to interfacing of sensors with electronic circuits was also given. Student made automatic irrigation system using moisture sensor. Students also learned how to check sensors' working using online software tools.

### **WORKSHOP ON ARDUINO (21.05.22)**

Students were introduced to the concept of Microcontroller in the workshop. They also designed circuits using Arduino microcontroller. 11 students from 11 KV School, RCF participated in the workshop.

### **WORKSHOP ON ROBOTICS AND ITS PROGRAMMING (10.05.22, 20.07.22 , 10.09.22 & 15.09.22)**

The workshop provided information to students about the basic working of Robots. During the session, they were guided to assemble a line follower robot using sensor through interactive kits. Students also learned coding technique to program a robot. 23 students from Trinity College, Jalandhar participated in the workshop.

The workshop was organized for students from Swami Sant Dass School, Jalandhar (15.10.2022, 24.12.2022 & 31.12.2022) & for Army School, Beas (31.12.2022)

### **WORKSHOP ON ELECTRONICS FOR BEGINNERS (28.07.22)**

The students learned working of capacitors, ICs, diodes, transistors, resistors, etc. They were made to understand the concept of power supply circuits. The students made rectifiers wherein they learned how to convert AC voltage into DC during the practical session.

### **WORKSHOP ON BEST OUT OF WASTE (25.08.22)**

The students learned to make use of scrap waste like, cardboard. They made balancing objects based on the concept of centre of gravity .

### **WORKSHOP ON CIRCUIT DESIGNING (08.08.22 & 29.09.22)**

The students learned about Microcontroller by designing circuits using Arduino microcontroller. The students designed electronic circuit for ultrasonic sensor and learned programming part involved using the sensor for controlling the output devices.

### **WORKSOP ON CODING TECHNIQUES (20.08.22)**

In this workshop, the students learned coding technique to program a robot . They learned how to operate and program the robot.



### **WORKSHOP ON LETS DO HOME AUTOMATION (03.09.22 & 17.09.22)**

In this session students learned basic concept of sensors and its working. An introduction to interfacing of sensors with electronic circuits was given. Students made automatic touchless switches using IR sensor to switch ON/OFF the electrical appliances. They also learned how to check sensor working using online software tools.

### **WORKSHOP ON LOW COST WATER LEVEL INDICATOR (26.11.2022)**

In this workshop, the students designed an electronic water level indicator circuit to detect various level of water in a tank to stop the wastage of water. Besides, students also learnt the working of transistors, relay, resistance, LEDs and rectifiers. 26 students from Swami Sant Dass School, Jalandhar and Lord Krishna School attended the workshop.

### **WORKSHOP ON ARDUINO CODING (20.09.22)**

The students got an overview of coding techniques and learned how to sketch a program and uploading method in Arduino micro controller. They also made LED blinking program and checked its actual working of the program.





### **WORKSHOP ON IR SENSOR (04.10.2022)**

The workshop was organized for 26 students from Swami Sant Dass School, Jalandhar. The students learnt the working of IR sensor and related circuits.

### **WORKSHOP ON WIRELESS ELECTRICITY (04.11.2022)**

In this workshop, the students learnt the concept of electromagnetic induction.

### **WORKSHOP ON TROUBLESHOOTING IN ELECTRONICS (06.11.2022)**

During the workshop, the participants were explained the working of basic electronic components. Students also learnt to check components like capacitors, wires, diodes, soldering problems, fuse and resistances.

### **WORKSHOP ON AUTOMATION (12.11.2022)**

The students learnt about working of Infra Red sensors in automation. The workshop was organized for 38 students from Swami Sant Dass School, Jalandhar.

### **WORKSHOP ON FUN WITH ROBOTS (07.12.2022 & 30.01.2023)**

The students learnt how to assemble a robot, working of microcontroller and its interfacing with sensors and motors. Students assembled their own robots and programmed the robot using LEGO Kits.

### **WORKSHOP ON ELECTRONICS FOR BEGINNERS (23.01.2023)**

The workshop was organized for students from Lord Krishna School, Sultanpur Lodhi involving participation of 24 students. Students learnt working of various components like capacitors, ICs, diodes, transistors, resistors etc., concepts about power supply circuits and made rectifiers wherein they learnt how to convert AC voltage into DC.

### **WORKSHOP ON ELECTRONICS CIRCUIT DESIGNING (20.02.2023)**

The workshop was organized online by Innovation Hub for students of Army Public School, Beas involving participation of 21 students. Students learnt about integrated circuit IC 555 and were guided to make timer circuit in electronics using Tinkercad software. The workshop introduced the students to tilt sensor and how to control devices using the sensor.



# SD-ASK Program

PGSC, in collaboration with United Nations Development Program-SDG Coordination Centre, has undertaken SD-ASK (Sustainable Development-Attitude, Skills and Knowledge) program to create awareness on Sustainable development among youth. 43 SD-ASK clubs in schools across Punjab have been set up.

The Sustainable Development Goals (SDGs) were established in 2015 by the international community as part of the UN 2030 Agenda for Sustainable Development through which countries of the world collectively pledged to eradicate poverty, find sustainable and inclusive development solutions, ensure everyone's human rights, and generally make sure that no one is left behind by 2030. SD-ASK program focuses to make children aware of citizen's role in achieving Sustainable Development, promote knowledge dissemination in the area and moulding their attitudes through activities, demonstrations, competitions, film shows and expert talks. Every fortnight an activity on a particular SDG is organized for the clubs. During the year 2022-23, following SDGs were covered & activities organized under each SDG are as below:

## SDG- 6: Clean Water & Sanitation



- Overview of the SDG-6
- Demonstration on Water Testing
- Celebration of World Earth Day

- Talk on Basics of Rain Water harvesting
- Water Audit Activity
- Poster Making competition

Ms Nandita Mathur, Coordinator, SDGCC-Punjab gave an overview of the Sustainable development goal-6 to the participants. Ms. Mathur emphasized that clean water is right of all. She also talked about adverse effects of contaminated water. Dr Vandana Awasthi, Scientist & Head Quality and assurance, PBTI demonstrated on how to check the water quality of different samples of water. 127 students from different schools joined the session.

Under this program, World Earth Day-2022 was also celebrated. A talk on "Basics of Rain Water harvesting" (Resource Person: Dr. G.S Dhillon, Divisional Head, Deptt. of Soil & Water Conservation, Punjab) and "Water

Audit Activity" (Resource Person: Mr Sanjeevan Singh Dhadwal, Ex-Coordinator Jalandhar District Eco Clubs) was organized. Dr. G. S Dhillon in his talk emphasized on the need of Rainwater harvesting and talked about Punjab's ground water stress. He informed that 95% of water is being used in agricultural and allied practices. Mr Sanjeevan Singh Dhadwal demonstrated how to conduct water audit at school/home. He also demonstrated setting of rainwater-harvesting system at home. At this occasion, a poster making competition was also organized. 70 Students participated in the event.

## SDG- 7: Affordable & Clean Energy



- Overview of SDG-7
- Talk on How renewable energy can power India?
- Essay Writing Competition

## Overview of SDG-7 (August 6)

To give an overview of SDG-7, i.e., "Affordable & Clean Energy" an introductory session to the SDG 7 was organized on 06/08/22. Ms. Kamajit Kaur, Co-coordinator of SD ASK Program delivered a talk on "How renewable energy can power India?" An Essay Writing Competition on the theme "Building sustainable energy future" was also organized.



## SDG- 11: Sustainable Cities & Communities

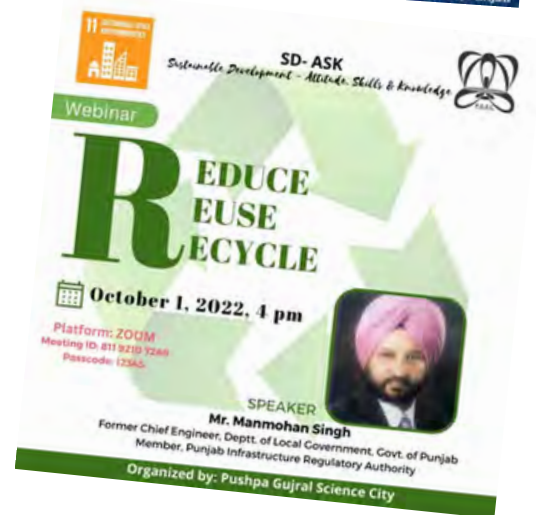
### Expert talk on "What are Smart and Resilient Cities?"

Dr Ashok Sharma, **Former Member Secretary, H.P State Pollution Control Board** was the speaker. Dr. Sharma gave an overview of SDG-11 and discussed in detail about smart and resilient cities. He also shared the advanced but sustainable technologies that may help in future to create smart cities.



### Talk on Reduce / Reuse / Recycle (October 1)

Mr. Manmohan Singh, **Former Chief Engineer, Department of Local Government, GoP,** Member Punjab Infrastructure Regulatory Authority was the expert speaker. Mr. Singh shared effective and advanced technologies to reduce, reuse and recycle the solid waste. 87 students attended the session.



## SDG- 13: Climate Action

- Celebration of World Environment Day
- Poetry recitation competition
- Activity on Calculating Carbon Foot Print & Hand Print
- Celebration of International Day for Climate Action



### World Environment Day (June 5)

Celebrated annually on 5 June and encourages awareness and action for the protection of the environment. The day was celebrated by PGSC under this program on this year's theme "Only One Earth". Ms Anusha Sharma, **Project Officer- Natural Resource Management and Biodiversity UNDP** was the expert speaker at this occasion. A poetry recitation competition was also organized at this occasion.

### Film Show (July 16)

The show was organized in collaboration with Centre for Environment Communication, New Delhi. Ms. Alka Tomar, President CEC, moderated the show. Following films were screened :

- Payenge Aisa Ek Jahan - A music video by OXFAM, India
- Causes and effects of Climate Change by National Geographic
- Global Warming by National Geographic
- The final tide by Vikram Mishra
- Rolex Awards Laureate by Sonam Wangchuk
- What is solar power by National Geographic
- Climate change: we are the problem & the solution

The screening was followed by discussion on key scientific issues in the film.



### SDG- 14: Life below water

- Overview of SDG-14
- Expert Talk on "How do oceans impact life and economy of people living far away from oceans?" (November 12)

SDG 14 aims to increase the sustainable use of water resources while protecting marine ecosystems from pollution, overfishing, acidification, and other human activities. The SDG acknowledges the importance of oceans in regulating the global climate system and their importance as a source of economic, social, and environmental resources. An expert talk on "How do oceans impact life and economy of people living far away from oceans?" was organized for the clubs. Dr. Simrit Kahlon, Prof., Department of Geography, Panjab University, Chandigarh was the expert speaker.

### Activity on Calculating Carbon Foot Print & Hand Print ( June 25)

An activity on how to calculate Carbon footprint and hand print was organized for the SD ASK clubs. Dr Rupali Bal, Scientist, PSCST was the resource person. Dr. Bal said that every individual is contributing towards increase of the carbon footprint. This increase in carbon footprint is affecting our planet adversely. She also shared tips on how to reduce the carbon footprint. 102 students from different schools attended the event.

A slogan writing competition was also organized.

### Celebration of International Day for Climate Action (October 28)

At this occasion, a talk on "Climate Change & Its Implications" was organized. Dr. P.K. Kingra, Prof. & Head, Department of Climate Change and Agricultural Metrology, Punjab Agricultural University, Ludhiana was the expert speaker. Dr. Kingra shared in detail various causes of climate change - natural, external and anthropogenic and what we can do at individual level.



## SDG- 15: Life on land



- International Biodiversity Day celebration
- 22 Days, 22 Actions campaign undertaken
- Expert Talk on “Endangered Species: Implications of declining Population, threats and way forward”

A talk on “Endangered Species: Implications of declining Population, threats and way forward” was organized on May 29, 2022. Ms Mita Nangia Goswami, ESD Expert, Swiss Agency for development & Cooperation, Mangolia was the resource person.



## SD-ASK (PHASE-2)

**Orientation session for SD-ASK 2023:** PGSC organized a virtual tour to Kamla Nehru Public School to give first-hand experience to the SDASK clubs about how sustainable development goals can be adopted by them at school level on 28.01.2023. The School has set a benchmark in this direction and adopted SDGs since its inception in 2015.

## SDG- 5: Gender Equality



**"Meet the Woman Scientist" at the occasion of International Day for girls and women in Science (February 11)**

The International Day of Women and Girls in Science is an annual observance adopted by the United Nations General Assembly to promote the full and equal access and participation of women in Science, Technology, Engineering and Mathematics (STEM) fields. The First Woman President of the Astronomical Society of India, Dr. G.C. Anupama (Visiting Professor, Former Dean & Senior Professor, Indian Institute of Astrophysics) was invited to deliver a talk.



## SDG- 6: Clean water & sanitation



### Celebration of World Water Day:

A poster making & Street play competition was organized at the occasion. The theme was "Pro planet people"

## Women Technology Park

Empowerment of Rural Women through Science based skill development' was an initiative taken by Pushpa Gujral Science City (catalyzed & supported by SEED Division, Department of Science & Technology, GoI) to empower the women in rural areas. The project offers training to the rural women in Mushroom Cultivation ( with special focus on *Pleurotus sajor caju*), Preparation of Cow Dung Logs & Pots and Value Addition to textiles (Hand Block Printing and Computer Assisted Embroidery). During the year 2022-23 :

- 25 Orientation Programmes on livelihood generation organized. 502 women participated.
- 49 women completed trained in Block printing and Computer Embroidery.
- 79 women trained in *Pleurotus sajor caju* .
- 5 women trained in Cow Dung logs and pots.

The primary project area was Distt. Kapurthala. However, it was not limited to Kapurthala Distt. and PGSC extended the benefits of the project to the rural the women across Punjab [Sangrur, Gurdaspur, Bathinda, Taran Taran, Patiala, Ferozpur, Pathankot, Jalandhar, Mohali, Sri Muktsar Sahib, Ropar(Rupnagar), Moga] through Department of Rural Development and Panchayats, Govt. of Punjab. The park has benefitted >500 women directly as well as additional women trained by Krishi Sakhis of Deptt. of Rural Development and Panchayats, Govt. of Punjab. Many of these women, especially in Patiala distt. are earning Rs 8,000-Rs 10,000 per month during the season through Dhingri cultivation. Story published in Dainik Bhaskar (Patiala) on 17/1/22. From 2020-2023, the park has trained:

- 294 women directly in Mushroom cultivation which includes *Pleurotus sajor caju* (Dhingri or fan mushroom) as well as Milky mushroom.
- 149 women in Cow Dung logs and pots and a self help group has been facilitated to initiate its own enterprise by purchasing their own machines.
- 141 women in Block printing & computerized embroidery.
- 81 women in stitching of 3-layered cotton masks during COVID-19.

The park has:

- Empowered rural women by making them economically independent, hence improved socio-economic status of women in the area.
- Provided science based skill development and livelihood opportunities to both literate, semi literate and illiterate non-working women in rural areas.
- Provided skills and confidence to these women from economically backward families, thus helping them to achieve economic and social independence.



# Other Activities

## Fairs & Exhibitions



**PGSC participated in the India-International Trade Fair 2022 at New Delhi from 14.11.2022 to 27.11.2022 at the Punjab Pavilion. Major attractions were: Be a Ghost or Discover your twin, Skill game & Be an astronaut**

## Media Achievements

- Article on Mathematics Gallery published in Ajit Newspaper on 01.05.2022.
- PGSC partnered with FM Radio City 91.9 to promote PGSC amongst masses through radio quiz contest to enhance PGSC's outreach for which PGSC provided 2 free tickets to winners of quiz competition till 05.10.2022.
- Special remarks of DG, PGSC on AIR and PRO, PGSC spoke on DD Shimla and St. Soldier Time YouTube Channel at the occasion of National Science Day.

Besides, all the events organized by PGSC were widely covered by print, electronic and social media.



## Films/Papers/Books/newsletter/ reports

- Promotional film of Pushpa Gujral Science City (9.28 mins) and Mathematics Gallery (3.36 mins) in English and Hindi language produced.
- PGSC Virtual Tour (27.11 mins) produced.
- PGSC e-calendar-2023 released on December 31, 2022.
- 'Buzzer': The Quarterly e-newsletters of PGSC.
- Article on food adulteration - "Watch what you eat" submitted to DREAMS 2047 - a monthly magazine published by Vigyan Prasar, Gol.
- "22 Days, 22 Actions"- A report on the International Biodiversity Day campaign.
- SD-ASK- A report on activities of the programme.



## Bird Survey

A bird survey of winter season (species & bird count) was conducted from 30.12.2022-31.12.2022. 43 species were recorded earlier in summer and spring season. 18 more species were recorded this time.



# Financial Statement

## Operational Expenses during the year 2022-2023

Items	Expenditure (in lakhs)
Salary & Allowances	557.37
Administrative expenses	18.19
Operation & Maintenance expenses	248.48
Depreciation	181.34
<b>TOTAL</b>	<b>1005.38</b>

## Revenue generated during the year 2022-2023

Item	Income (in lakhs)
Sale of Tickets	665.19
Lease/rent/sponsorship	34.65
Commission receipts (Souvenir Shop, Boating Sale, Trackless Train, Photography)	3.1
Dino Park	18.56
Other Receipts	136.04
Receipt form Govt of Punjab	400
<b>Total</b>	<b>1257.54</b>



# Annexures



# Members of PGSC Society

1. Minister of Science & Technology  
Punjab Civil Secretariat, Chandigarh
2. Minister,GoP
3. Member of Parliament, Punjab
4. Member, Rajya Sabha, Punjab
5. Sh. Naresh Gujral  
5-A, Amrita Shergill Marg, New Delhi
6. Chief Secretary to Govt. of Punjab  
Punjab Civil Secretariat, Chandigarh
7. Principal Secretary  
Deptt. of Finance, Govt. of Punjab  
Punjab Civil Secretariat, Chandigarh
8. Director  
NIT, Jalandhar
9. Director  
CSIO, Sector 30, Chandigarh
10. Director  
National Agri-food Biotechnology  
Institute, Mohali
11. Director  
IISER, Sec 81, SAS Nagar
12. Director  
National Institute of Technical  
Teachers Education & Research, Chd
13. Director  
Terminal Ballistic Research Laboratory  
Chandigarh
14. Director,Confederation of Indian  
Industry (CII), Northern Region, Chd
15. Director  
NIPER, Mohali
16. Secretary to Government of India  
Ministry of Culture, Shastri Bhawan,  
New Delhi
17. Head  
NCSTC, Deptt. of Science and Technology,  
New Delhi
18. Financial Advisor  
Ministry of Culture, New Delhi
19. Vice Chancellor  
Punjab Technical University, Jalandhar
20. Vice-Chancellor  
Central University of Punjab, Bathinda.
21. Vice Chancellor  
Guru Nanak Dev University, Amritsar
22. Vice Chancellor  
Punjab Agriculture University, Ludhiana
23. Vice Chancellor  
Punjabi University, Patiala
24. Vice Chancellor  
Panjab University, Chandigarh
25. Vice Chancellor  
Baba Farid University of Health Sciences,  
Faridkot
26. Principal Secretary  
Deptt. of Science, Technology and  
Environment,Mini Secretariat, Chandigarh
27. Principal Secretary  
Deptt. of Industries, Govt. of Punjab,  
Udyog Bhawan, Chandigarh
28. Secretary  
Deptt. of Higher Education, Govt. of Punjab
29. Secretary  
School Education, Govt. of Punjab
30. Director  
Science City, Kolkata
31. Chairman  
State Board of Technical Education, Punjab
32. Director  
National Science Centre, New Delhi
33. Executive Director  
Punjab State Council for Science &  
Technology, Chandigarh
34. Director General/Member Secretary  
Pushpa Gujral Science City, Kapurthala


## Members of the Governing Body

1. Chief Secretary to Govt. of Punjab  
Punjab Civil Secretariat, Chandigarh
2. Sh. Naresh Gujral  
5-A, Amrita Shergill Marg, New Delhi
3. Dr. Ashok Kumar Mittal  
Member Parliament, GoP
4. Dr. Ravjot Singh  
MLA, GoP
5. Secretary to Government of India  
Ministry of Culture,  
Shastri Bhawan, New Delhi
6. Secretary to Govt. Of Punjab  
Deptt. Of Science and Tech & Env.  
Punjab Civil Sectt. 2, Sec 9, Chd
7. Principal Secretary  
School Education  
Punjab Civil Sectt. 2, Sec 9, Chd
8. H.H. (Brig.)Sukhjot Singh,  
The Villa, Kapurthala
9. Vice Chancellor  
Central University of Punjab,  
Bathinda, Punjab
10. Vice Chairman  
CRRID, Sector-19-A, Madhya Marg,  
Chandigarh
11. Director  
Central Scientific Instruments Org.,  
Chandigarh
12. Director General  
CSIR, Anusandhan Bhawan, New Delhi
13. Vice Chancellor  
Punjab Technical University, Jalandhar
14. Chairman  
CII, Northern Region, Sector 31-A,  
Chandigarh
15. Head, NCSTC  
Deptt. of Science and Technology,  
New Delhi
16. Executive Director  
PSCST, Chandigarh
17. Editor, Daily Ajit (Punjabi) and  
Ajit Samachar (Hindi), Jalandhar
18. Joint Editor  
Hind Samachar Group / Punjab Kesari,  
Jalandhar
19. Chief Editor  
Daily Post, Chandigarh
20. Director  
National Science Centre, New Delhi
21. Director  
NIPER, Mohali
22. Principal Secretary  
Tourism, Govt. of Punjab,  
Punjab Civil Secretariat - II, Chd
23. Financial Advisor  
Ministry of Culture,  
Shastri Bhawan, New Delhi
24. Director  
TBRL, Chandigarh
25. Director  
NIT, Jalandhar
26. Director General  
Sardar Swarn Singh National Institute  
of Bio-Energy, Kapurthala

27. Deputy Commissioner  
Kapurthala
  
28. Vice Chancellor  
Maharaja Ranjit Singh State Technical  
University, Bathinda
  
29. Director General/Member Secretary  
Pushpa Gujral Science City  
Kapurthala





A network diagram consisting of numerous blue circular nodes connected by thin, light blue lines. The nodes are arranged in a somewhat irregular, interconnected pattern, resembling a molecular structure or a complex network. The background is a dark blue gradient with some faint, scattered light blue dots.

**Jalandhar-Kapurthala Road, Punjab**  
**01822-501963/64**  
**[www.pgsciencecity.org](http://www.pgsciencecity.org)**