

Capsule

JULY
SEPT
1988

10



Shri L. P. Shahi, Union Minister of State for Education & Culture, Govt. of India (Centre of the photo) inaugurated the gallery for the children of Calcutta on 8 May 1988. Shri Samar Bagchi, BITM's Director, explains the exhibits to the Hon'ble Minister.



(Right) A child with the SAND SWING exhibit. The gallery contains a lot of things for them to do.

CALCUTTA'S NEW WONDERLAND

BITM offers to Calcutta children their own science gallery

The only exhibit in this gallery that is locked away in a glass-fronted closet is a real human skeleton. But that is for obvious reasons. All the other assorted exhibits strewn all over the 4500 sq. ft. floor space (the largest gallery so far in Birla Industrial & Technological Museum) are irresistibly inviting to the children: they are inspired to touch, feel, push, move, roll, lift, make something, or even unmake and remake! For them, the whole gallery is a playground, a funfair, a colourful world of spontaneous interaction, fun, imagination and creativity.

It is a gallery with a difference. It has been designed exclusively for children between the ages of two and a half and eleven. Here exhibits, embodying Piaget's theory of child's cognitive development, offer

to the children a wide variety of learning experiences, through multi-sensory interaction. The most noticeable aspect about the exhibits is the absence of elaborate instructions, which makes interaction with them a funfair game, and not just a drill. A single exhibit often provides more than one learning encounter.

Here is a whole world of action!

In the section WATER BODY children can have a fling at soap bubbles and soap films, and observe what myriad shapes are formed when air is blown through a soap film. In one corner they can conduct their own experiments on sinking and floating in a water trough, and splash a little as well! The section KNOW ABOUT YOUR BODY offers an environment where the children can quench their innate curiosity to know about themselves. Here through X-Ray plates they can study the interior of a human body or can measure their height, weight, rate of growth, reaction-time, memory-retention abi-

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NCSM SPEAKS

With impeccable regularity CAPSULE is reaching out the news of the developments in science communication around the world. On the one hand there are the multifaceted programmes of NCSM; and on the other, those of the likeminded organisations in India and abroad. NCSM's programmes, in a nutshell, comprise establishment of a chain of science centres in different parts of the country; design and fabrication of a large number of exhibits for thematic galleries, science parks and temporary exhibitions; development of curatorial training programmes; establishment of the Central Research & Training Laboratory for training science communicators of the world over; continuous research in development of new educational extension programmes for the students' and rural communities; and strengthening international collaborative relationships and exchange programmes for mutual benefits.

CAPSULE invites participation in a greater degree from likeminded organisations everywhere to disseminate their ideas, activities and experiences to a wider audience.

SCIENCE MUSEUMS—a special feature

NEW CHILDREN'S GALLERY

(Contd. from page 1)

ilities and inter-sensory co-ordination. The group of exhibits on Light and Vision allow the children to peep into the mysterious world at the other end of a microscope, periscope, telescope or a binocular. Demonstrated is also the phenomenon of optical illusion, through distorted mirrors. The glass-fronted COMMUNICATION BOOTHS expose the children to

the different modes of communication like telephone, telegraphy, wireless and laser. In the process the children learn to be precise while handling a message, and their power of thinking and the quality of listening to others are also developed. The PHENOMENA CORNER offers a maze of exhibits involving the principles of lever, transportation of goods, pendulum, see-saw, changing perspective and so on, which provide the children with learning encounters like estab-

lishing identity and equivalence; and making functional relationships. An interesting exhibit in this section is the working model of a crane which the child himself operates with his hands and legs, to lift and transport loads from one place to another. Also, there are a number of sand trays, for the children to indulge in their passion for digging sand, without any fear of rebuke.

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EXPERIENCE



DISCOVER



EXPLORE



EXPLORE AGAIN

Clockwise from top left : 1. TEST YOUR STEADINESS exhibit. 2. Experiment with soap film. 3. Falling sands make a wheel move in this exhibit SAND PLAY. Like Water-Trough, it has special attractions for the children. 4. SEE-SAW TUBE. 5. (Centre) ROLL ON STAIRCASE exhibit. The sinuous movement of a spring is really fascinating.

SCIENCE MUSEUMS IN INDIA

VACATION ACTIVITY AT NEHRU SCIENCE CENTRE, BOMBAY

All the science museums and science centres under NCSM across the country regularly conduct vacation activity courses, for the benefit of the students' community. Nehru Science Centre



Vacation activity in Chemistry at Nehru Science Centre, Bombay.

organized such courses during 2-12 May and 17-27 May, in the disciplines of Physics, Chemistry, Life Sciences, Electronics, Computers, Engineering and Arts & Crafts. A total of 178 students took part, in two batches.

29TH ANNIVERSARY OF BIRLA INDUSTRIAL & TECHNOLOGICAL MUSEUM CALCUTTA

The oldest science museum under NCSM celebrated on 2nd May 1988 its 29 years of service to the people. The most major event of the anniversary celebration programme was the inauguration of Children's Science Gallery, on 8th May. A week-long science quiz contest involving different levels of school students was also a part of the programme. On the Day science-films were continuously screened, for innumerable visitors.

On 11th May was observed the "Museum Day", in which 60 science teachers, deputed by the State Council for Education Research & Training, West Bengal, took part. Apart from visiting the Museum galleries and the mock-up coal mine, they participated in Spectral and Science De-

monstration Lecture (SDL) programmes.

PORTABLE PLANETARIUM GOES TO TIRUNELVELI

With the objective of taking basic astronomy education to rural districts, NCSM introduced a year ago TARAMANOAL or the portable, inflatable planetarium system, in technical collaboration with Learning Technologies Inc. of the USA. In the first batch 25 copies were indigenously fabricated, and many of them are presently in circulation in various NCSM Units and like-minded organisations across the country.

On 20 May 1988 one of these planetaria was inaugurated at the district Science Centre, Tirunelveli, in Tamil Nadu.

CELEBRATION OF THE FIRST ANNIVERSARY AT RAMAN SCIENCE CENTRE, NAGPUR

Children's Science Park and Mobile Science Exhibition of the Centre was inaugurated on 11 April 1987. The main building of the Centre is nearing completion.

The Centre celebrated the first anniversary by organising a painting competition for young school-students of the area. 21 students from 11 schools took part in this event and depicted their ideas in water colour about "utilisation of solar energy". Prizes of Rs. 50/- and Rs. 25/- were there, to enthuse the winners.



Faithful imagination takes shape in painting and gets a prize, in the Art & Draw competition at Nagpur.

VOLUNTARY GUIDE SERVICE SCHEME INTRODUCED AT NEHRU SCIENCE CENTRE, BOMBAY

In collaboration with Marathi Vignyan Parishad and Saraswati Vidyalaya, the Centre has initiated a voluntary guide service scheme, for the benefit of the visitors and school-groups. Under this scheme, 28 students of Saraswati Vidyalaya are currently being trained at Nehru Science Centre on its exhibits, programmes and other facilities.

CHILDREN ARE THEIR CONCERN.....

Bal Bhavan Society of Vadodra in Gujarat conducts a variety of programmes for development of children of the community. Presently about 800 children receive the benefits of these services.

- On request from nearby schools, Bal Bhavan activities are now being provided to school children during school hours. 300 school children participate in different activities there, from 3-30 to 5-00 P.M., from Monday to Friday.
- On request from parents, Bal Bhavan offers transport facility to children residing in distant areas. 150 such children are presently availing themselves of the activities, every weekend.
- Eleven children from the non-formal education programme have been rehabilitated in schools of the Baroda Municipal School Board.
- Bal Bhavan activities are also provided to handicapped children, on every Thursday and Friday, from 9-30 to 11-30 A.M. Twenty-two children are presently taking advantage of this facility, under the National Children's Fund grant. Here children are provided with a variety of stimulating activities, to explore their physical and mental abilities.
- Apart from educational activities, coaching in gymnastics has also been started by a trained State coach, in collaboration with the State Sub-Coaching Centre for Sports. Coaching is being conducted on Saturdays and Sundays, at the present for boys only.

National Science Seminar-1988
on
INFORMATION REVOLUTION
Venue : New Delhi

September 1988.
Organised by
National Council of Science
Museums in collaboration with
Education Departments of the
State Governments.

International Workshop on
SCIENCE MUSEUMS WITHOUT
WALLS—EXHIBITS TO GO
Venue : Delhi, Bombay, Bangalore,
Calcutta.

Organised by
National Council of Science
Museums in collaboration with
UNESCO, ICOM and Indo-US
Sub Commission on Education &
Culture.
5—13 December 1988.

45TH SESSION OF THE ICOM
ADVISORY COMMITTEE &
66TH SESSION OF THE ICOM
EXECUTIVE COUNCIL
Venue : Paris, France
5-6 July and 7-8 July 1988.

INTERNATIONAL SUMMER
SCHOOL IN MUSEOLOGY
Jan Evangelista Purkyně University
Venue : Brno, Czechoslovakia
1—30 August, 1988.

Celebrations of the
BIRTH CENTENARY OF
PROF. C. V. RAMAN and
DIAMOND JUBILEE OF
RAMAN EFFECT
Venue : Calcutta.

2—6 November 1988.
Organised by
Indian Association for the
Cultivation of Science
Calcutta.

NATIONAL SOLAR ENERGY
CONVENTION—1988.
Venue : New Delhi
2—4 December 1988.
Indian Institute of Technology
New Delhi.

International Conference on
MATHEMATICAL MODELLING IN
SCIENCE & TECHNOLOGY
(ICMMST—88)
Venue : Madras, India.

11—14 August 1988.
Organised by
Department of Mathematics
Indian Institute of Science
Bangalore.



TEST YOUR MEMORY

In the vertical board there are 36 rectangles and the matching horizontal keyboard contains equal number of keys. When the START switch is pressed, a rectangle glows at random for an instant and goes off. The visitor has to press the corresponding key. The

answer, whether right or wrong, is indicated on the keyboard, and if right, he scores 10 points, recorded by the digital display on the left. Another digital counter records the time-lapse. Then in quick succession, two, three, and four rectangles glow at random; and if the visitor can press the corresponding keys correctly everytime, he scores 40 points and wins the game. A musical tune is heard as the indication of it.

REACTION TIME

Here is a model car, stationary but complete with a START switch on the instrument board, a steering wheel and accelerator and brake pedals. A traffic signal post with green, amber and red lights completes the scene.

When the start switch is pressed, the green light goes 'on'. The young driver can go on accelerating until the green light goes off and the amber light is 'on'. After a time the red light is 'on', and brake has to be applied. The time-lapse between the glowing of red signal and applying the brake is the 'reaction time' which is measured in milliseconds by a digital counter on the dashboard of the car.



FUN SCIENCE

catalytic support to budding science centres

Rendering catalytic support to other science centres and organisations engaged in the task of popularising science in India and abroad is a major part of NCSM's programme. One of the landmarks of achievements is the introduction of a portable, inflatable planetarium system to take basic astronomy education to rural doorsteps throughout India (reported in detail in CAPSULE-9). And now, it is the creation of FUN SCIENCE.

It is a set of 100 fully participatory exhibits, ready for installation, which will be of great help to budding science centres, without infrastructure for exhibit development. NCSM's support is given in the following ways:

- * Development and supply of 100 fully hands-on, international quality exhibits on cost basis, ready for instant use.
- * Preparation of a layout design to suit a particular hall and complete installation of exhibits.

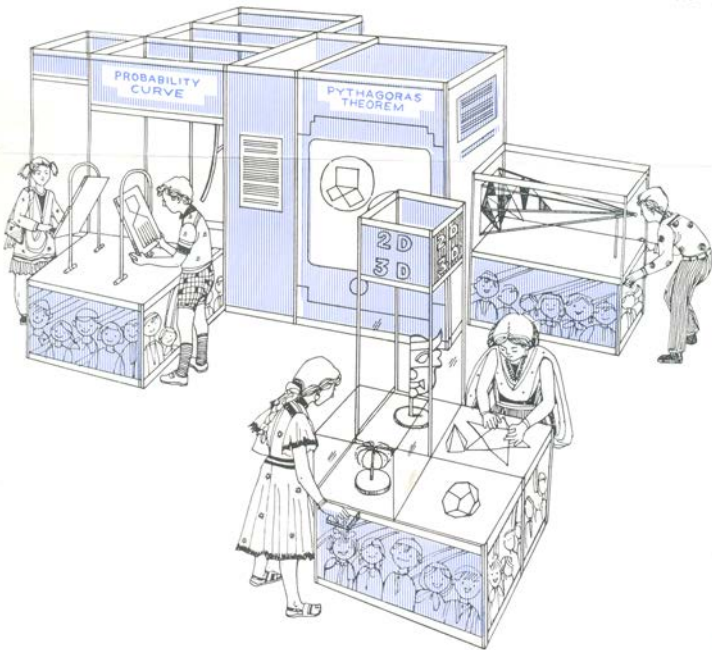
- * Imparting training for repair and maintenance of exhibits.

EXHIBITS

- * 100 exhibits include the following topics—

Defying Gravity ?
Mathematics
Fluidics
Pendulum
Rolling Balls

(Contd. in page 8)



ELLIPSE —in Nature and in the Mind

Indo-US Workshops on science museums organised by NCSM under the auspices of Indo-US Sub-Commission on Education & Culture, participated by science museums professionals of India and the USA, have been highly successful in generating ideas for creation of new exhibits and programmes. As for example, Birla Industrial & Technological Museum opened its new gallery for the children on 8th May, 1988 which is an outcome of the Indo-US Workshop on "Participatory Exhibits for Pre-School Children" held in India in 1984. Similarly, opening of the Science Park in the St. Louis

Science Centre in the USA is an outcome of the Indo-US Workshop on Science Parks held at St. Louis in April, 1987.

The VIIIth Workshop on "Ellipse in Nature and in the Mind" was held in Bangalore and Ooty, during 9-15 May, 1988. Four U. S. science museum professionals and their ten Indian counterparts from NCSM took part in several brain-storming sessions to conceive, plan and design about 75 exhibits on the topic. The broad seven areas in which the exhibits were classified are :

* from oblong to ellipse in Nature

- * ellipse in history, mind, art and philosophy
- * ellipse in astronomy
- * generation of ellipse
- * characteristics of ellipse
- * ellipse in structure and technology
- * kits and activities on ellipse

Participants in the Workshop came fully prepared with ideas, sketches, transparencies and models. Participants presented their ideas and discussions were held about their suitability and feasibility of their

(Contd. in page 8)

ANIMATED MOMENTS...

INTERACTIVE MOMENTS...



25 YEARS OF SPACE PHOTOGRAPHY CONTINUES TRAVELLING SHOWS

After Hyderabad, the NASA exhibition "25 Years of Space Photography" moved over to H. P. Municipal Planetarium in Warangal, Andhra Pradesh. Shri N Raji Reddi, Minister of Power of the State inaugurated the exhibition on 4 March 1988 and it stayed there upto 31 March 1988. About 5000 people visited the exhibition, which, in a small town like Warangal, is quite considerable.

District Science Centre, Dharampur in Gujarat was the next stop. On 20 May 1988 the exhibition was inaugurated there.



Inauguration of the 25 Years of Space Photography exhibition at Warangal.

ONTARIO SCIENCE CENTRE

Amsterdam, Germany, Saudi Arabia, Mexico, Italy and the USA. Ontario Science Centre's staff members had been recently circling the globe, to deliver travelling exhibitions, feasibility studies, demonstration of how to build a better paper airplane, magnetic fingers and other variations of the educational and entertaining programmes that have made the Ontario Science Centre world-famous.

A \$ 120,000 feasibility study for the City of Amsterdam has been initiated which will provide a conceptual plan for a new science centre, to lead the city's waterfront development. Ontario Science Centre also collaborated with other top science centres of the world in exploring the options for creating new science centres in Rome and London.

LASER FAIR OPENS IN ORLANDO SCIENCE CENTRE, USA

Laser was rated as first among 50 topics the public would like to see an exhibition about, according to a survey conducted by the Orlando Science Centre. Consequently, work has begun for developing an exhibition called Laser Fair that will open this October. The 2,500 sq. ft. exhibition will demonstrate the fundamental principles of laser and how laser light differs from ordinary incoherent light, as well as the technology of laser and how they are used by society. The show will be presented in conjunction with the University of Central Florida and local laser companies.

"More than 30 people have already volunteered to demonstrate lasers

and we haven't even made a public announcement about the exhibit yet; it's all by word of mouth", said Director of Exhibits, John Harri-man. "Lasers seem to fascinate all age groups".

Local laser companies will provide virtually all of the laser components on short or long-term loan, including laser scanners, fiber optic cable, and laser guns.

When the show opens, it will contain some temporary sections, such as a segment rented from Holo Gallery. In 1989, the temporary parts of the exhibition will close but the rest will remain as a permanent exhibition.

CANADIAN MUSEUM OF CIVILIZATION OPENS

When the Canadian Museum of Civilization opens in 1989, visitors will have an opportunity to be involved in Canada's past and present through exciting presentations and performances. Highlights of the Museum will include—

Theatre :—where visitors will have an opportunity to witness and to participate in many daily and special events typical of cultures from across Canada and around the world.

Performing Arts Hall :—where the movement, emotion and expressiveness of traditional dances in Canada will be presented.

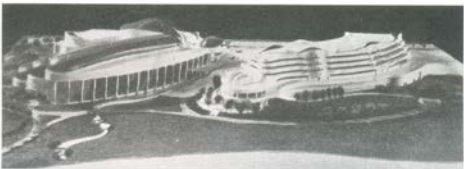
History Hall :—one of the largest and most dramatic of the Museum's exhibition spaces, the Hall will recreate the sights and sounds of nearly a thousand years of Canadian history.

Children's Museum and Discovery Room :—designed on the prototype of the Children's Museum of Indianapolis, this Museum will stress on hands-on interaction with objects and encourage learning at a sensory level.

The Mediatheque :—containing an array of advanced information on information technologies and imaginative multimedia learning programmes.

The First Imax/Omnimax Theatre in the world :—where both Imax and Omnimax films can be shown.

Emphasis on Diverse Cultural Heritage of Canada :—to understand and appreciate Canada's rich cultural heritage, the Museum will develop exhibits on various ethnic groups.



The Canadian Museum of Civilization will become "the museum prototype of the 21st Century"—Computers and fibre optics networks will interact to make it the first 'intelligent' public building in Canada.

FUN SCIENCE

(Contd. from page 5)

Sound
Perpetual Motion ?
Optical Illusion
Fun with Electricity
Light
Magnetism
Mirrors
Chemistry

- * Mounted on anodised extruded aluminium structures, easy to set up and shift.
- * Complete with supporting graphics and attractive motifs colourfully painted on PVC coated panels by silk screen process.
- * Complete with illustrated English text.
- * Operate on 220V/50HZ or 110V/60HZ A. C.
- * Exhibits come with a complete catalogue, layout design and instruction manual.
- * Require 1000 sq. mt. of space.

ESTIMATED COST

(as on date)

- * Rs. 40,00,000/- (US \$ 300,000) with ready-for-use display. Cost of design of exhibits and layout plan for specific exhibition hall/s is included. Cost of packing, forwarding, transport and tax/duty, if any to be charged extra.

INSTALLATION AND TRAINING

- * Installation within India is free of cost. For installation outside India, the NCSM team comprising 1 engineer and 2 technicians, shall be supported by the user organisation.
- * Training will be given free of cost at the Central Research & Training Laboratory of NCSM in Calcutta. Travelling and other expenses of the trainees shall be borne by the user organisation.

ELLIPSE

(Contd. from page 6)

production. In the preparation of designs interactive and participatory aspect of the exhibits were always kept in mind. A list of 55 exhibits, 42 models and exhibits and 13 kits and activities out of about 75 planned, was made, which can be accommodated in an area of about 300 sq. metre. The workshop recommended that a travelling exhibition on 'Ellipse' may be made in duplicate which may be shown in different science museums of both the countries. To give it a shape of real joint venture it was further proposed that each country may produce half of the total number of exhibits in duplicate and exchange the duplicate exhibits so as to form a complete exhibition. Both the sides agreed to explore funding for the exhibition.

NEW CHILDREN'S GALLERY

(Contd. from page 2)

For pre-school children there is a "KITS FOR KIDS" CORNER—a carpeted oasis closely resembling a nursery classroom. A number of kits and puzzles contained in colourful boxes are kept there for the children to play with for hours together and give vent to their inventiveness and creativity.

Branding it as a children's gallery does not necessarily exclude elder visitors. Here escorting parents and teachers are most likely to go through a process of nostalgic reliving of their own playful childhood's learning experiences. The informal setting of the gallery, the pervasive air of freedom and abundance is most likely to prompt the elders and the children to share a learning experience and become teachers to each other.

THE NEXT.....

National Science Seminar on Information Revolution—1988

Rising through Block, District and State levels, thirtyone school students, representing all the States and Union Territories of India, will assemble at New Delhi during September 1988, for the final round of contest.

CAPSULE-11 will give you the details.

WE NEED.....

EDITOR CAPSULE is looking forward to your sending by July 31, 1988 publication materials for the eleventh issue of CAPSULE. Please send short notes, photographs, problems, suggestions, cartoons and puzzles.



Is this the legacy you want to leave for your children ?



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