

Report of the Biology Olympiad Exposure Camp

**CESME, HBCSE
(Under PMMMNMTT scheme of MHRD)**

Date: September 09-12, 2019



**Homi Bhabha Centre for Science Education
Tata Institute of Fundamental Research
September 2019**

The Biology Olympiad Exposure Camp is held every year with the idea of exposing teachers to various areas in biology and typically includes various exposure sessions in theory and experimental components of the Biology Olympiad. Eminent speakers/scientists interact with participants on various interesting topics, giving them a flavor of the biology olympiad activity.

The camp this year was organized by the Biology Olympiad Cell from 9th – 12th September 2019 at the Homi Bhabha Centre for Science Education (HBCSE), Mumbai. 20 teachers from all over India participated in the camp. The list of participating teachers is attached as Annexure I. The teachers were given a brief account of the Biology Olympiad Programme i.e. the various stages of the Olympiad selection, nurturing and training as well as an idea of the academic content of the program at the beginning of the camp. Experimental tasks in various areas are a very important component of the activity and the teachers were exposed to experimental tasks in a few areas as follows:

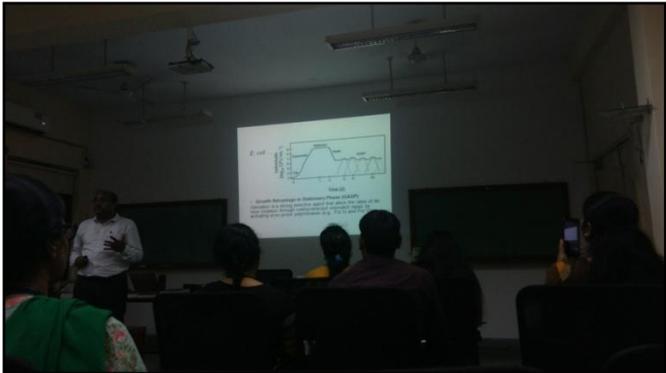
- **Plant Sciences:** Study of plant anatomy in relation to plant habitat.
- **Animal Science:** Classification systems.
- **Biochemistry:** Separation techniques and enzyme activity.
- **Ethology:** Study of animal behavior using *Drosophila melanogaster* and the Siamese fighter fish.
- **Genetics:** Pedigree analysis using simulated samples and observation of *Drosophila* mutants.
- **Molecular Biology:** Nucleic acid extraction and agarose gel electrophoresis.

Talks titled ‘Biology Classroom Unplugged: My Introspection as a Biology Teacher’ by Prof. B. B. Nath and ‘The Curious Case of a Biology Teacher!’ by Dr. Sasikumar Menon were delivered wherein points to improve the method of teaching biology were highlighted. Additionally a talk titled ‘Scaling Laws in the Natural World’ was delivered by Prof. Vijay Singh. Basic concepts in biology were covered in this talk. The participants were also oriented on how to design questions to test students’ understanding of concepts and a resource generation session was held. The questions designed by the participating teachers during this session were discussed on the concluding day of the camp.

EXPERIMENTAL SESSIONS



THEORY SESSIONS



Annexure I: List of Participants

Sr No	Name	Gender	State	College
1	K. Suresh	M	Andhra Pradesh	Sree Vidyanikethan International School
2	Altaf Ahmad Lone	M	J and K	Higher Secondary School
3	Ishfaq Ahmad Lone	M	J and K	Govt. Senior Secondary School
4	Jagdish Panjabrao Shiraskar	M	Maharashtra	Nabira Junior College
5	Mahesh Ramchandra Bhole	M	Maharashtra	Nabira Junior College
6	Mini Das	F	Chattisgarh	Sri Sankar Vidyalaya
7	Mohd. Ishaq	M	J and K	Govt. Girls Higher Secondary School
8	Mukesh Chand	M	Rajasthan	Happy Public Sr. secondary school
9	Nirja Kohli	F	Chattisgarh	Sri Sankar Vidyalaya
10	Om Prakash Patidar	M	Madhya Pradesh	Govt. Excellence Higher Secondary School
11	Pooja Govil	F	Rajasthan	St. Teresa's sr. sec. School
12	Rajasree V. R.	F	Karnataka	BGS National Public School
13	Rajesh Rathore	M	Madhya Pradesh	Govt. Model Higher Secondary School
14	Savitha Suverna	F	Karnataka	BGS National Public School
15	Shafat Bashir	M	J and K	Govt. High School
16	Snighdha Panda	F	Odisha	Govt. High School
17	Tribhushan R. Mundane	M	Maharashtra	Nabira Mahavidyalya
18	Velayat Ali	M	J and K	Govt. Higher Secondary School
19	Vidhi Oberoi	F	Uttar Pradesh	Bal Bharati Public School
20	Yousuf-Ali	M	J and K	Govt. Ashram Higher Secondary School

List of Resource Persons

Resource persons (outside HBCSE)	Resource persons (from HBCSE)
B. B. Nath	Anwesh Mazumdar
Vijay Singh	Rekha Vartak
Sasikumar Menon	Anupama Ronad
	Vikrant Ghanekar
	Harsha Chandwani
	Neha Khan
	Sayali Shelar

Annexure II: Time Table

Biology Olympiad Exposure Camp (9th – 12th September, 2019) Schedule

Venue:

Lecture Sessions: Lecture Room G1/G2, Ground Floor, Olympiad Building

Lunch: Canteen, NIUS Building

Lab sessions: Biology Olympiad Lab, First Floor, Olympiad Building

9th September, 2019

9:30 am – 10:00 am: Registration & Welcome

10:00 am – 11: 00 am: ‘Introduction to the Science Olympiad Program’
Prof. Anwesh Mazumdar,
National Coordinator, Science Olympiads

11:00 am – 11:30 am: Tea Break

11:30am – 12:30 pm: ‘The Biology Olympiad Programme’
Prof. Rekha Vartak, Academic Coordinator,
Biology Olympiad Programme

12:30 pm – 1:30 pm: Lunch

1:30 pm – 5: 30 pm: Lab Sessions (RV, AR, VG, HC, NK, SS)
(Plant Sciences involving study of plant anatomy in relation to the plant habitat
Animal Sciences with an emphasis on classification systems
Biochemistry including separation techniques and enzyme activity
Ethology ie study of animal behavior using Drosophila melanogaster and the Siamese fighter fish
Genetics involving pedigree analysis using simulated samples and observation of Drosophila mutants)

5:30 pm onwards: Library time

10th September, 2019

10:00 am – 11:00 am: Molecular Biology Lab (*Nucleic acid extraction and agarose gel electrophoresis*) (RV, AR, VG, HC, NK, SS)

11:00 am – 11:30 am: Tea Break

11:15 am – 12:30 pm: Molecular Biology Lab (*continues*)
(RV, AR, VG, HC, NK, SS)

12:30 pm – 1:30 pm: Lunch

1:30 pm – 5:30 pm: Resource Generation Session

11th September, 2019

10:00 am – 11:00 am: ‘Biology Classroom Unplugged: My Introspection as a Biology Teacher’

Prof. B. B. Nath, Former Head

Department of Zoology, Savitribai Phule Pune University

11:00 am – 11:30 am: Tea Break

11:30 am – 12:30 pm: ‘Scaling Laws in the Natural World’

Prof. Vijay Singh,

Centre for Excellence in Basic Sciences, Mumbai University

Former National Coordinator, Science Olympiads

12:30 pm – 1:30 pm: Lunch

1:30 pm – 5:30 pm: Resource Generation Session

12th September, 2019

10:00 am – 11:00 am: ‘The Curious Case of a Biology Teacher!’

Dr. Sasikumar Menon, Assistant Director,

Therapeutic Drug Monitoring Lab, Mumbai

11:00 am – 11:30 am: Tea break

11:30 am – 12:30 pm: Discussion of questions made by participants

12:30 – 1:30: Lunch

1:30 – 4:30: Discussion of questions (contd) and Conclusion

Resource Persons (HBCSE) for lab sessions:

RV: Rekha Vartak

AR: Anupama Ronad

VG: Vikrant Ghanekar

HC: Harsha Chandwani

NK: Neha Khan

SS: Sayali Shelar