

SCIENCE CLUB ACTIVITIES 2018-19

STEM-ED EDUCATION (SCIENCE TECHNOLOGY ENGINEERING MATHEMATICS ENVIRONMENT DESIGN)

The STEM-ED workshop took place on 6th September 2018 from 11 am to 3 pm in the Multipurpose Hall of St. Xavier's Institute of Education. The workshop was conducted by Trailblazers Foundation in conjunction with Dow Chemical International, both of whom are focussed on training teachers to educate students about the environment in a fun and simultaneously integrating environmental concepts with their pedagogies.

The objectives of the workshop were as follows:

- To understand the importance of environmental protection through school content.
- To experiment with school content by integrating facts and concepts about the environment.
- To experiment with school content by correlating it to other school subjects.
- To understand the use of interdisciplinary approach in the learning of concepts.
- To learn various pedagogical techniques of integrating social and environmental issues while teaching school content.

The workshop was divided into four activity stations and groups of 10-12 students were allocated one station each at the start and they had to rotate clockwise at the end of each 30-minute activity. The four activity stations were on the topics of Light, Surface Tension, Air Pollution and Food Wastage. The content and concepts taught at each of the stations had a multi-disciplinary and hands-on approach, highlighting sensorial teaching-learning techniques.

The content taught in the workshop had a global perspective and encapsulated the adverse effects of the slow-depletion of the Ozone Layer, Air Pollution, Hunger and its correlation to Food Wastage. The real-time application of Surface tension and its use by Penguins in keeping warm and water off their backs was beautifully illustrated and explained. The 'preservation of food activity' using simple kitchen ingredients was an innovative way to teach Food Safety and Preservation. The activity to reinforce the statistics of people deprived of food was very impactful. The group discussions at the end of each activity generated thought-provoking suggestions and solutions to combat food wastage and air pollution on a global level.

The workshop systematically integrated concepts and facts about the environment with the pedagogical content, thus providing the teacher trainees an insight on the teaching strategy of 'external and internal correlation'. The values of Peace and Environmental Harmony were elucidated creatively through each of the activities and demonstrations. The College's theme of 'Action of Harmony' was effectively highlighted through examples of environmental reconciliation and means to protect the environment.

The STEM-ED activities integrated separate and discrete subjects into a cohesive learning paradigm based on real-world applications. The STEM-ED projects possess the potential of providing innovative, blended learning as well as computational and critical thinking skills to the students. The goal is to pique students' interest into them wanting to pursue the courses, not because they have to, but because they want to. The emphasis is on showing students how the scientific method can be applied to everyday life and thus develop problem solving skills.

The workshop was an excellent eye-opener for all trainee teachers to learn how to integrate experiential learning to create a wholesome, holistic learning experience for the students.

“For the things we have to learn before we can do them, we learn by doing them.”
— Aristotle, *The Nicomachean Ethics*

Report by : Ms. Alethea Vaz

Teacher in Charge : Dr.Bijoy K Thomas