Theme for Teacher Conference – 2024 (TC-24)

Science without Experiments is Life Without a Soul

(A brief concept note)

Learning science through listening to lectures and reading from books helps mainly those who belong to the creamy layer of the intelligentsia. Though valuable, more is needed to engage the minds of all the students in any class. Learning by seeing demonstrations takes the student a step closer to understanding the principle involved in the experiment. Getting hands-on experience through *doing* science experiments permits students to learn the maximum out of the exercise.

Hands-on learning switches on the minds of students, which has led to the coining of the term "***Minds-on***". It allows students to discover more about scientific concepts. It contributes maximum to their bank of knowledge. The student is free to utilise that knowledge, which is now their personal property, for any other purpose, even if it lies beyond the boundaries envisaged by the curriculum.

Hands-on Science usually involves handling materials and tools, performing experiments, exploring the phenomena, and (at times) trying out their related ideas. It thus opens up opportunities for designing new experiments based on the same phenomena. It even adds fun to the learning process. It leads to students' overall activation of sensory and motor-related parts of the brain. Complex topics such as angular momentum or torque could be dealt with hands-on experiences.

Sub-Themes

1. **Benefits of hands-on learning in Science:** Hands-on activities are a form of active learning which promotes retention. Therefore, in effect, it improves students' performance in academic assessments. It leads students to a deeper understanding the scientific concepts taught in class.
2. **Affective impacts of hands-on experiences:** Engaging with hands-on activities provides a sense of accomplishment, and their attachment to science grows. Due to this aspect, it also supports students with learning difficulties. Hands-on learning is found extremely useful for students with learning barriers, such as students with autism.
3. **Development of original thinking through hands-on experiences:** Hands-on experiences at times would require finding out-of-the box solutions. As theories written in textbook, when had to work in the real life, requires reflection and judgement of both the reality and of Science. How hands-on opportunities could create original thinking could be shared with the community.

Potential authors are welcome to send papers/essays related to the major theme, even if these do not directly correspond to one of the sub-themes.

Process of conference: The one-day conference consists of a few invited talks by experts on this subject, and mainly, oral and poster presentations of "contributions by participating teachers".

The conference is scheduled for 3rd of February 2024 at Shree Gujarat Bhavan, Sect-16, Vashi. A detailed program will be announced in due course.

Submission of contributions: Essays/Papers relevant to the topic and not exceeding 1000 words are invited. These can be in English / Hindi / Marathi. These could be submitted by preferably by email (**nmsfscienceutsav@gmail.com**) or in printed form (see below for address). The paper should have a clear title, list of authors, affiliation, abstract, body of the text and references (if any). These will be moderated by experts and peers. Acceptances and feedback will be communicated to the authors. The accepted contributions that are presented by the authors in the conference will be brought out as conference proceedings and will be posted on NMSF website for international access.

Postal address for sending handwritten essays/papers:
Dr. A.M. Bhagwat, B51– Gitanjali, Plot – 52, Sector-17, Vashi.

Guide lines for contribution: While it is not necessary to contribute essay/paper for participating in the conference, a contribution from the participants in the form of essay/paper is very valuable. There is also a cash incentive for the accepted essays/papers. Based on the above note, the teachers may choose one of the sub topics to write their essay about. Having chosen the appropriate category, they may narrate their teaching experiences, description of actual experiments performed or result of a survey conducted. The essay/paper must have a unique title (not the same as the subtopic or main theme). A contribution that is relevant to the main theme but not fitting to any subtopic is also welcome.

Registration details:
Last date for receipt of papers: 31 Dec 2023
Every participant must individually register even though they are co-authors of same paper.
Registration fee per participant is **Rs. 500.00** : Mode of payment – Online / Cheque
Details for Online Transfer
Bank Name: Thane Janata Sahakari Bank Ltd.
Address: Vashi Branch, Plot No. 51, Sec. 17, Vashi, Navi Mumbai – 400703
Name of A/C Holder: **Navi Mumbai Science Foundation**
SB A/C No: 012110100002585 IFSC Code: TJSB0000012.
Website: http://www.navimumbaisciencefoundation.org