

Proceedings of  
One day Teachers' Conference on  
**“Encouraging and supporting students’  
thinking in the learning of science”**

Saturday, 6<sup>th</sup> February 2016

Gujarat Bhavan, Vashi, Navi Mumbai - 400703

Organised Jointly by  
**Navi Mumbai Science Foundation, Vashi**

In Association with  
**Shree Gujarati Samaj, Vashi**  
&  
**Maharashtra Academy Of Sciences (MC)**



**Science Utsav 2016**





## **Late Professor Chitra Natarajan (1954-2015)**

### **An Humble Tribute to an Humble Soul**

Navi Mumbai Science Foundation (NMSF) considers itself honoured while acknowledging the support it received from her during short interactions it has had while conducting one-day event "Teachers' Conference" during the years 2013, 2014 & 2015. The seeds of teachers' Conference", which is part of NMSF's bigger two-day event "Science Utsav", were sown in the year 2012, under the guidance of Prof. Jayashree Ramadas (present centre director, HBCSE). Next year onwards, due to limited availability of Prof. Ramadas, the responsibility of nurturing the year old sapling was taken up by Professor Chitra Natarajan, despite her deep involvement in several other events & projects.

It was during these interactions, that we came to know about her and her personal qualities. No amount of words can describe all the facets of her charming personality and life as experienced by us at NMSF. She always had something more to contribute and enlighten us further in any area of our scientific endeavour related to the field of "EDUCATION", and specially those related to school students.

In her passing away, we at NMSF have lost a dear friend and a vibrant guide. However, we are sure that her soul will always be around us in the hour of need and guide us intuitively. At our end we will continue to ensure that the 4-year old plant of "Teachers' Conference" prospers in leaps & bounds and adds stature to the image of the departed soul. Already the signs of this happening are visible. We now find teachers coming from places outside Navi Mumbai (like Thane, Santacruz, Ghatkopar, Bhiwandi & Pune, to mention a few) & taking advantage of the proceedings of the Conference.

(Members of NMSF)

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**Navi Mumbai Science Foundation: Science Utsav 2016**  
**One Day Teachers' Conference (TC-16)**

on

**Encouraging and supporting students' thinking in the learning of science**

There is wide recognition across countries that education needs to prepare students for a changing society. National policy documents stress the need to move beyond rote learning and prepare students to be creative thinkers and doers. Many teachers are ready to take up the challenge and encourage creativity and thinking in their classrooms. This conference, organized by Navi Mumbai Science Foundation (NMSF), is aimed at sharing experiences and ideas of how students' thinking can support science learning.

Description of the sub-themes:

1. Students' questions - a pathway to learning

Young children are full of questions that they are always throwing at adults. As children become older they stop asking questions, especially in school. This does not mean that they don't have questions. When teachers encourage them, students begin to think and reason. In trying to answer their questions or address their misconceptions and common doubts, through observation, experiment and discussion, students in the classroom learn as a group. Often teachers also learn something valuable. Are there such experiences that you can share from your own classroom? How did they lead to meaningful science learning?

2. Using students' out of school experience in science learning

Students from different backgrounds bring diverse experiences to the classroom. Some have experience of farming, some of small workshops, some of buying and selling, some have visited places, etc. Sharing these experiences and connecting them with science in the curriculum becomes a wonderful learning opportunity. Let us know of examples of connecting out-of-school knowledge and school learning from your teaching experience.

3. Encouraging "non-participating" students to participate in thinking

It is always a challenge to involve students in the back benches and to get them interested in participating in the classroom. Sometimes their non-participation is because their interests and questions are different. Their identity may be centred around activities that are different from classroom work, perhaps sports or art or craft. Connecting science learning with such interests can lead to their participation. Sometimes, encouraging them to contribute to on going discussion may lead to their participation. What experiences from your teaching related to this subtheme would you like to share?