

## MTA Norther Region Conference

### Keynote Talks

**Keynote 1:** Innovative Approaches to Mathematics Education: Project-Based Learning and Classroom Narratives

*Prof. Shobha Bagai*, Director, Cluster Innovation Centre, University of Delhi

Session chair: Prof. Gurmeet Bakshi, Department of Mathematics, Punjab University

Abstract: The evolving landscape of mathematics education calls for innovative, hands-on methodologies that actively engage learners. This keynote delves into project-based learning as a transformative approach to teaching mathematics, emphasizing real-world applications and critical problem-solving. By sharing classroom stories and reflective experiences, it highlights the impact of such strategies in fostering creativity, collaboration, and a deeper understanding of mathematical concepts, inspiring educators to revolutionize their teaching practices.

**Keynote 2:** Posing problems for the mathematics classroom

*Prof. R Ramanujam*, Azim Premji University, IMSc, Chennai (Retd.)

Session chair: Dr. Vivek Vijay, Department of Mathematics, IIT Jodhpur

While problem-posing and problem-solving have been considered central in mathematics education, we rarely discuss problem-posing as an aspect of pedagogy. This talk will discuss some experiences with structuring problem-solving at different stages.

**Keynote 3:** Celebrating Mathematics

*Prof. Fozia Qazi*, Islamic University of Science and Technology, Kashmir

Session chair: Prof. Amber Habib, Department of Mathematics, Shiv Nadar Institute of Eminence, Delhi NCR

This talk will focus on my experiences of organizing math festivals for school children as a means to alleviate math phobia and to attract students towards the study of mathematics. I will illustrate various enjoyable activities that can easily be organized with minimal resources.

**Keynote 4:** Visual and Combinatorial Thinking in Teaching and Learning Mathematics

*Dr. Shailesh Shirali*, Director, Teacher Education Centre, Valley School KFI, Bangalore

Session chair: Prof. Jonaki Ghosh, Department of Elementary Education, Lady Shri Ram College for Women

Visual thinking and combinatorial thinking are important pathways for the teaching-learning of mathematics, and teachers need to think about how best to incorporate them into their work. This talk will illustrate how we might do this through various examples. The task presents a challenge to our imagination and visualization skills, as well as our artistic skills! But if we incorporate them into our teaching, the benefit to students will be lasting, e.g., in developing mathematical intuition and problem-solving ability.