

**LS Shashidhara FASc FNASc FNA
Professor**

To,
The Principal/ Head of the School,

Subject: STEP for STEM: workshops to train school teachers in using hands-on activities in teaching.

Dear Sir/Madam,

It gives us immense pleasure to announce our new project *STEP for STEM through Hands-on Activities* for science and mathematics school teachers. The [Centre of Excellence in Science and Mathematics Education \(CoESME\)](#) at Indian Institute of Science Education and Research (IISER) Pune and [TATA Technologies](#) have jointly launched this ambitious program to train school teachers towards improving the quality of science and mathematics education in schools. As an extension to Padmashri awardee Mr. Arvind Gupta's efforts of using low-cost material to convey concepts in science and maths, this program aims to systematically train teachers in applying activity-based tools, as per the school curriculum and also develop video lesson plans for a wider reach.

As part of the present project, each selected teacher will undergo thorough training to use hands-on activities in the classrooms to effectively explain scientific concepts to children. We would provide raw material for teachers to design and make their own activity kits, which can be carried by the teachers to their schools to be used for teaching by themselves and other colleagues. A smaller number of teachers thus trained will be selected for more rigorous training as trainers and we facilitate them running hands-on science activity workshops for other teachers in their schools and also nearby schools. We would also engage motivated teachers with good communication skills to develop video lesson plans for a wider reach across the country and beyond.

We request you to nominate two teachers (one teaching students at 5-7th standard and one at 8-10th standard; at least one nominee should be woman) from your school for these workshops. Please see the next page for details of the workshop and the nomination form.

Based on the experience, clarity of conceptual understanding and a small write up about hands-on activities, we will select up to 200 teachers for enrolling in the workshops giving due representation to as many schools as possible, while maintaining gender parity.

Duly filled and signed nomination forms should reach **IISER Pune at the address provided in the nomination form by 28th December 2018**. *The entire training program is sponsored by TATA Technologies. There is no financial implications to the schools or the participating teachers.*

We look forward to active participation of your school in this important school education program.

Date: 26 November 2018



L. S. Shashidhara
Professor and Coordinator
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STEP for STEM: workshops to train school teachers in using hands-on activities in teaching Details of the program

Level 1 Workshops:

1. All selected teachers are mandated to attend 10 workshops to be conducted over a duration of one year (Jan-Dec 2019).
2. Each workshop involve training in a set of 2-3 activities for a given topic as per the school curriculum.
3. Teachers will be divided to batches of 50. Thus, there would be a total of 40 sessions in the year as each module would be repeated four times for the four batches.
4. While teachers are expected to adhere to their batch for all the ten workshops, if for any reason, a teacher can't attend on a specific day, she/he will be accommodated in a different batch such that no teacher will miss any session.
5. Schedule of all the workshops would be provided on the first day. These workshops will be held on working days and the school is expected to provide the teacher official leave for attending the workshops. It is expected that including orientation and feedback sessions, each teacher will visit IISER Pune at least 12 full days spread over one year.
6. We would ensure that days/month during school examinations will be omitted in the schedule.
7. The teacher will be provided with material for making science models, and digital content.
8. A certificate of participation along with a grade based on the feedback assessment on the skills of making and using science activities in teaching.
9. IISER Pune will also provide post-training mentoring help to the teachers who attended the workshops.
10. Teachers are expected to attend all 10 workshops in order to get the certificate and other benefits.
11. The timing each workshop will be from 10:00 AM to 5:00 PM (teachers can stay up to 6:30 PM if they wish to practice learned activities). Lunch and refreshments would be provided on campus.
12. The workshops will also consist of lectures to clarify concepts, interaction with eminent scientists and education experts, use of digital teaching aids etc.

Advantages for the school and the teachers:

- Hands-on science activity tools/toys to be used in classrooms to improve the quality of teaching.
- Interactions with scientists and experts.
- Certificate for completion of program and follow-up mentorship for implementation of the trained skills in the classroom.
- To be in the mailing list to receive information on various activities at IISER Pune that are beneficial to School teachers.

Level 2 Workshops

1. Out of 200 teachers from level 1 workshops, 40 Teachers will be selected for level 2 workshops.
2. Level 2 workshops will start by June 2019 and will be for the duration of one year thereafter.
3. Those selected teachers are expected to attend 10 additional workshops at Level 2 and they would be given another certificate of participation and appreciation.
4. Level 2 workshops will focus on more rigorous training in developing new activities and skills of training other teachers.
5. Lesson plans with embedded videos, photographs will be created by teachers during level 2 workshops. These digital resources would be posted online for free use by teachers worldwide.
6. Teachers and their Schools would be acknowledged in all the new resources that they contribute to creating.

STEP for STEM through hands - on activities
Nomination Form for Science and Mathematics Teacher
5-7th Standard

Name and Address of the School: _____

School is: Government / Government Aided / Run by NGOs / Private

Medium of Instruction: Marathi / English / Semi-English / Other (Specify _____)

Name of the Teacher: _____

Email of the Teacher: _____

Mobile Number of the Teacher: _____

Educational Qualification of the Teacher: _____

Subject(s) taught by the Teacher: _____

Past Teaching Experience (No. of Years): _____

Number of years left in service: _____

Past experience of Hands-on model making, Science projects, competitions etc.: _____

Write a small paragraph (in English / Hindi / Marathi) explaining the importance of activity based education for conceptual understanding of Science and Mathematics (**Only this section of the form is to be filled by the nominated Teacher**)

The hard copy of this form should reach following address by **28 December 2018**

*Smt. Indrani Balan Science Activity Centre
Indian Institute of science education and research (IISER) Pune
Dr. Homi Bhabha Road, Pashan,
Pune: 411008, INDIA / Tel No.: (020) 2590 8079
Or mail the scanned copy to
shilpajain@iiserpune.ac.in*

Signature of Nominated teacher

Date of Submission:

Signature and Seal of Principal/Head of the school

STEP for STEM through hands - on activities
Nomination Form for Science and Mathematics Teacher
8-10th Standard

Name and Address of the School: _____

School is: Government / Government Aided / Run by NGOs / Private

Medium of Instruction: Marathi / English / Semi-English / Other (Specify _____)

Name of the Teacher: _____

Email of the Teacher: _____

Mobile Number of the Teacher: _____

Educational Qualification of the Teacher: _____

Subject(s) taught by the Teacher: _____

Teaching Experience (No. of Years): _____

Number of years left in service: _____

Past experience of Hands-on model making, Science projects, competitions etc.: _____

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