

**Dr. T.P. Sarma**

Professor in Mathematics

Department of Education in Science and Mathematics

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**Educational Qualification:** M.Sc., Ph.D. (Mathematics) from University of Delhi

**Areas of Work**

Mathematics Education at School level, Development of Teaching Materials, Teacher Training Material, Textual Material, Research: Primary Mathematics, Mathematics Education, Mathematics

**Publications**

1. Chaos in Restricted Three Body Problem, Proceeding of workshop of Celestial Mechanics and Space Dynamics (1996)
2. Hori's method to nonlinear coupled oscillators and application to restricted problem, Bull. Astro. Soc. India (1999) with Ayub Khan and L.M. Saha
3. Effect of solar radiation pressure and tidal forces on the rotational motion of satellite, Bull. Astro. Soc. India (2000) with Ayub Khan and L.M. Saha
4. Motion of an artificial satellite moving around the oblate earth under the influence of atmospheric drag, H.P. University (2003)
5. Hill's stability problem criteria in oblate restricted three body problem, Proc. Nat. Acad. Sci. India (2005) with Purnima Dixit and L.M. Saha
6. Lie technique in restricted three body problem, Ganit Sandesh (2005) with Ayub Khan and L.M. Saha
7. A study on students' performance on mathematics in relation to teaching technique, School Science (2005).
8. Non-resonant and resonant solutions using KBM technique, Ganit Sandesh (2007) with Ayub Khan and L.M.Saha
9. Learning from children some anecdotes from classroom, Mathematics Education - Expanding Vistas (2008)

10. A study of Mathematics Education in present scenario, "Anusandhan Vatika, Vol.I, (2011)
11. Measuring Chaos in some discrete Non-linear system, International Journal of Engg. And Innovative technology, Vol. 2, Issue 5, (2012)
12. Effectiveness of teacher at Upper Primary Level, Journal of Teacher Education in Developing Nation, Vol. 3, No.5, (2012)
13. Activity based Methods in Teaching Mathematics, Proceeding of UGC sponsored Conference, (2012)
14. Assessment Concept and Strategies, School Science, Vol. 50, No.2 (2012)
15. Teaching number to Early Grade Children, Proceeding of National Conference, RIE, Mysore, 2015
16. Reflective and Activity Approaches of Teaching Mathematics, Proceeding of National Conference, RIE, Mysore, 2015, with Purnima Jain
17. A Study of Relation and Function Proceeding of National Conference, RIE, Mysore, 2015, with Rahul Sofat
18. Enhancing Self Learning the Biggest Challenge in Mathematics, Proceeding of National Conference, RIE, Mysore, 2015, with Venika Krishan.
19. Complexity Analysis in Bouncing Ball Dynamical System, Cornell Univ., Library, USA, 2016 with L.M. Saha and Purnima Dixit
20. Dynamic Lyapunov Indicator (DLI): A perfect indicator for Evolutionary System, 2016 with Nitesh Sahni and L.M. Saha
21. Teacher's Perception Regarding Inculcation of Values through Mathematics, Journal of Indian Education, NCERT, Vol. XLIV, No.1, 2018 with Komal
22. Co-spaces: Future Tool to Foster Creativity in Learners, Kalyan Bharati, Vol.-36 No. (XII) 2021 with Rasna Sehrawat.
23. Impact of National Education Policy 2020 On Mathematics Education, Proceedings of 10<sup>th</sup> National Conference on Mathematics Education, 2021 organized by RIE Mysuru
24. Complexities in Chaotic Hyper chaotic Systems, Ganita Sandeh, Vol 31 (June & Dec. 2017), Issued April 2022 with L.M. Saha and M.K. Das
25. Complexities Investigation In Prey-Predator System with Allee Effect, Ganita Sandeh, Vol 31 (June & Dec. 2017), Issued April 2022 with L.M. Saha
26. Regular and Chaotic Motion of a Satellite Influenced by Solar Radiation Pressure, Ganita Sandesh, Vol. 32, June & Dec. 2018, Issued March, 2023 with L.M. Saha

27. Teaching of Geometry in School Mathematics, Pramiti, 2023

**Papers Presented:**

- (i) Presented a paper in the workshop on Celestial Mechanics and Space Dynamics held at BRA Bihar University, Muzaffarpur during 18th- 22 Sept. 1995.
- (ii) Presented a paper at Astronomical Society of India's meeting which was held at Raman Research Institute, Bangalore, during Feb. 1-4, 1999
- (iii) Presented a paper at Young Astronomer's Meet which was held at Uttar Pradesh State Observatory, Monora Peak, Nani Tal during June 1-3, 1999
- (iv) Presented a Paper on " National Conference of Mathematics and its applications to analysis" in the Himachal Pradesh University, Shimla during 7-9 November 2000
- (v) Presented a paper in ASI (Astronomical Society of India) Meeting at Gorakhpur University during 15-18 November 2000
- (vi) Presented a paper in the workshop on Celestial Mechanics and Dynamical System during October 4-13, 2001 at IUCAA( Inter University Centre for Astronomy and Astrophysics), Pune
- (vii) Presented a paper in the 16th Annual Conference of Rajasthan Ganita Parishad at Govt. College, Ajmer during 26-27 Feb. 2005
- (viii) Presented a paper entitled "Learning from Children – some anecdotes from the classroom" at Lady Sri Ram College for women, New Delhi during 8 -9 Feb. 2008
- (ix) Delivered Invited Talk on Indians Mathematicians at National Conference of Mathematical Modeling in Natural Sciences at Al-Falah School of Engg. And Technology on Aug.12, 2008
- (x) Delivered a Key Note Address on Making Mathematics Learning a Fun and Magic at Elementary Level on 24th Nov., 2009 at Don Bosco Institute, Kharguli Guwahati organized by SSA, Assam
- (xi) Presented a paper at NERIE, Shillong on Right to Education and its perspective (2011)
- (xii) Presented a paper at HBCSE, Mumbai on Effectiveness of Training of Mathematics for Capacity Building of Teachers at Upper Primary Stage.(2012)
- (xiii) Presented a paper entitled " Activity based Mathematics Teaching Mathematics : Present Scenario", in National Conference at Ramgarha College of Education, Punjab, during 15-16 Feb., 2012

- (xiv) Presented a paper at National Meet at NCERT entitled “ Issues and Challenges in Mathematics Assessment” during 20-22, December, (2012)
- (xiv) Presented a paper at National Meet at NCERT entitled “Issues and Challenges in Mathematics Assessment” during 20-22 December, 2012
- (xiv) Delivered a talk on Mathematics and how to use activity based teaching at Primary Level at Salwan School, Delhi on 16<sup>th</sup> May, 2013
- (xv) Presented a paper at National Conference on Developing Mathematics Teacher for Quality Learning for all at R.I.E., Ajmer during 20-22 December, 2013
- (xvi) Presented a paper at National Conference on Constructivist approach in teaching Mathematics at R.I.E., Bhopal during 20-22 December, 2014
- (xvii) Delivered a Talk on “Activity based Mathematics Teaching” at Queen Mary’s School, Model town, Delhi on 3<sup>rd</sup> November, 2015
- (xvii) Presented a paper at National Conference on Teaching Number to Early Grade Children at R.I.E., Mysore during 21-22 December, 2015
- (xviii) Presented a paper in National Seminar entitled “Chaotic Motion of Satellite in Solar System” at Sobhasaria Group of Institutions, Sikar, Rajasthan on 15<sup>th</sup> March, 2016
- (xix) Presented a paper entitled “Mathematics Laboratory and other learning resources use of Mathematics kit” during National Conference in Mathematics Education during 19-20 December, 2016 at RIE, Bhubaneswar.
- (xx) Presented a paper entitled Complexity Analysis of a Nonlinear 2-D Prey-predator System” in the International Conference on Mathematics and Application” at Ramjas College, University of Delhi during 26-28 April, 2017.
- (xxi) Presented a Paper entitled “Investigation of complexity and chaos in Kraut model “in the National Conference on Advances in Applied Mathematics and Statistics (NCAAMS 2017) at Mata Sundri College for Women(University of Delhi) during 7-8 September, 2017.
- (xxii) Presented a paper entitled “Teaching of Algebra at School Level” at NERIE Shillong during 21-22 Dec., 2017 in the “ National Seminar on Mathematics Education”.
- (xxiii) Presented a Paper entitled “Complexity Investigation in Prey-predator System with Allee Effect” in National Conference on “ New Advances in Theoretical Computer Science, Algorithm, and Mathematical Modeling” at Jodhpur Institute of Engineering & Technology, Jodhpur during 27-28 April, 2018.

- (xxiv) Presented Paper in the Conference entitled “ Dynamics of Evolution of Bogdanov system: Analysis of chaos and complexity ” in the International Conferences on Physics, Society and Technology organized by Deshbandhu College, Univ. of Delhi in 2019 (pl check the exact date from hard copy)
- (xxv) Presented a paper in IX National Conference on Mathematics Education entitled “ A Cross Country Analysis of Mathematics Syllabus with Focus on Core Areas of Content ” organized by RIE, Bhopal on 20/12/2020 through webinar.
- (xxvi) Presented a paper in National Conference on Integration of STEAM in School Education entitled “ Teaching Approaches of Mathematics ” organized by RIE, Bhopal on 26/02/2021 through webinar.
- (xxvii) Presented a paper entitled “Chaos in Rotational Motion of an Oblate Satellite” in Online International Conference on Recent Advances in Computational Mathematics & Engineering during 19-21 March, 2021.
- (xxviii) Presented a paper entitled “Contribution of Mathematics in Ancient India” in the 3 Day National Seminar on “ Science & Technology in Vedic Literature and its Relevance in Modern Perspective ” organized by Department of Sanskrit, Delhi University during 23-25 October, 2021 on online mode.
- (xxix) Presented a paper in 10<sup>th</sup> National Conference on Mathematics Education entitled “Impact of National Education Policy 2020 in Mathematics Education during 20-22 Dec., 2021 through online mode organized by Regional Institute of Education (NCERT), Mysuru.
- (xxx) Presented a talk on “Preparatory Workshop on Mathematics in the Light of NEP 2020 ” in National Symposium on Mathematics in the light of NEP 2020 and Indian Knowledge System on 28 May, 2022 in IGNOU organized by Vidya Bharati Uchcha Shiksha Sansthan
- (xxxix) Presented a paper in 11<sup>th</sup> National Conference on Mathematics Education entitled “ Mathematics Structure at Foundation stage as per NCF Foundational Stage 2022 ” during 21-22 Dec., 2022 at Regional Institute of Education (NCERT), Bhubaneswar.

**Research Study Conducted:**

- (i) A Study of Students’ Performance in Mathematics Relation to Teaching Techniques (2004-05)
- (ii) A Study on Classroom Transactions of Science and Mathematics Textbooks at Upper

Primary, Secondary and Higher Secondary Stages in the Light of NCF-2005 (2008-09)  
(Project Team Member)

- (iii) Evaluation Study of CLAPS of Andhra Pradesh(2009-11) ( Project Team Member)
- (iv) Study of Syllabi and Textbooks in Science and Mathematics at Upper Primary and Secondary Stage across the country (2015-16) (Team Member)
- (v) A Study of Utilization of Mathematics Kits in Schools of Delhi at Secondary Stage (2016-17).
- (vi) A Study of Effectiveness of Mathematics Kits in Schools of Delhi at Secondary Stage (2017-18).
- (vii) A study to identify the teaching strategies used by the school teachers to teach Mathematics at Upper Primary Stage (2018-19).
- (viii) A study to assess the Learning Outcomes of Mathematics at Upper Primary Stage in the North Eastern States (2020-21).
- (ix) Review of Mathematics Syllabi at Primary, Upper Primary, Secondary and Higher Secondary of Mathematics (2020-21).
- (x) An Evaluation of Class VI Textbook of Mathematics at Upper Primary Level (2020-21).
- (xi) An Evaluation of Class VII Textbook of Mathematics at Upper Primary Level (2020-21).
- (xii) An Evaluation of Class VIII Textbook of Mathematics at Upper Primary Level (2020-21).
- (xiii) An Evaluation of Class IX Textbook of Mathematics at Upper Primary Level (2020-21).
- (xiv) Development of Competency Framework and Reviewing Learning Outcomes in Mathematics in 2021-22
- (xv) Revision of Syllabus and Textbooks in Mathematics in the light of National Education Policy 2020 in 2022-23 (Team Member).
- (xvi) A Study to Assess the Impact of Hybrid Model of Education on Student's Understanding of Mathematics Concepts at Secondary Level (2022-23)

**Acted as a Resource Person in the following programmes:**

- (i) Training of KRPs in Teaching of Mathematics with Special Emphasis on Newly Introduced Topics at Sr. Sec. Level for Punjab and Srinagar at R.I.E., Ajmer during Sept. 27 to Oct. 01, 2004

- (ii) Training of Key Resource Persons in Teaching Mathematics at Sr. Sec. Level held at R.I.E. , Ajmer during Nov. 29- Dec.3, 2004
- (iii) Training of Key Resource Persons in Teaching Mathematics at Sr. Sec. Level held at S.I.E., Jammu during Dec. 13-17, 2004
- (iv) Training of Key Resource Persons in Teaching of Mathematics of Sr. Sec. Level held at R.I.E., Ajmer during Sept. 27- Oct.1, 2004
- (v) Training of Key Resource Persons in Establishment of Mathematics Laboratory at Sec. Level held at R.I.E., Ajmer during Jan. 4-6, 2006
- (vi) Training of Key Resource Persons on Value Education during 24-28 Dec., 2007
- (vii) Orientation of Master Resource Persons of NE States (Manipur) at DM College, Imphal during 3-4 Feb., 2008
- (viii) Orientation of Master Resource Persons of NE States (Meghalaya) at DERT, Shilling during 24-25 March, 2008
- (ix) Orientation of KRP's on Multilevel Teaching at RIE, Ajmer during 24-28 Nov. , 2008
- (x) Training of Head Master of Uttar Pradesh and Rajasthan at RIE, Ajmer during 5-6 Oct., 2009
- (xi) Training of Primary and Upper Primary Teachers at North Eastern region d at Guwahati during 25-28 Jan., 2010
- (xii) Orientation of Master Trainers at Secondary Level at DESM, NCERT, w.e.f. 13-17 Feb., 2012
- (xiii) Orientation on CCE of Meghalaya Teachers at NERIE, Shillong during 30th May to 1st June, 2012.
- (xiv) Haryana School Secondary Board for Selection of Material at Primary Level at Bhiwani on 13<sup>th</sup> May, 2013
- (xv) Development of Lab Manual of Upper Primary Mathematics at SCERT, Gurgaon, Haryana on during 2-5 July, 2013
- (xvi) Capacity Building Programme of DIET Faculty at RIE, Ajmer during 16-18 December, 2014
- (xvii) Participated as Resource person for the Finalization of Herbal Garden in the DESM, NCERT during 15-18 January, 2015
- (xviii) Participated as Resource Person in Tagore Garden, Kendriya Vidyalaya on 24<sup>th</sup> May, 2015 to address difficulties in Mathematics for Primary Teacher for the course work of In-service Teacher Conducted by IGNOU

- (xix) Participated as a Resource Person in training of Upper Primary Kits and Secondary Kits in DEK during 20-21 July, 2015
- (xx) Participated Review of Textbooks of Mathematics for Classes I and II developed by Various State and UT's conducted by DEE during 10-11 August, 2015
- (xxi) Participated as a resource person in RIE, Ajmer during 24-25 August, 2015 for the planning meeting of Capacity building of Teachers Educators.
- (xxii) Participated as a Resource Person in the training programme for teachers at Govt. Co-ed Sr. Sec. School at Laxmi Bai Nagar, New Delhi on 26<sup>th</sup> August, 2015
- (xxiii) Participated in Review of item developed by ESD, NCERT in the Various Language on 7<sup>th</sup> September, 2015
- (xxiv) Participated as a Resource Person in Orientation of KRP's working in SC dominated areas on Activity Based Learning Science at Secondary Stage during 14- 18 September , 2015 at DESM. NCERT.
- (xxv) Participated in the Programme of Training Workshop of Secondary School Readiness Programme (SSRP) organized by RMSA during 28<sup>th</sup> September- 1<sup>st</sup> October, 2015
- (xxvi) Participated as a Resource Person at RIE, Bhopal during 11-12 October, 2015.
- (xxvii) Delivered a Talk on Popularization of Mathematics at KV, Pitampura on 16<sup>th</sup> October, 2015.
- (xxviii) Participated as a Resource Person in DEE, NCERT for Early Primary Mathematics Programme during 16-18 November, 2015.
- (xxix) Participated in Departmental Advisory Board of Division Educational Kit on 20<sup>th</sup> November, 2015
- (xxx) Participated in Departmental Advisory Board of Department of Elementary Education on 23<sup>rd</sup> November, 2015.
- (xxxi) Participated as a Resource Person in the workshop of Mathematics conducted by North End Queen Marry School on 30<sup>th</sup> November, 2015.
- (xxxii) Participated as Resource person on 14<sup>th</sup> January, 2016 in the programme entitled " Orientation of Key Resource Persons working in ST dominated Areas" in DESM, NCERT.
- (xxxiii) Participated as Resource Person in the Department for the Development of IMC Resource Centre on 28<sup>th</sup> January, 2016.
- (xxxiv) Participated as Resource Person in the Programme entitled " Enrichment



Programme for Teacher Educators at Elementary Level (DIET) on Pedagogical Content Knowledge in Mathematics from 8<sup>th</sup> to 12<sup>th</sup> February, 2016 organized by DTE, NCERT

- (xxxv) Participated in the National Conference on Emerging Trends in Science and Mathematics Education in Delhi University during 18-19 Feb., 2016
- (xxxvi) Participated as Resource Person in the Programme entitled "Follow-up Workshop for KGBV Teachers already trained (20111-2012 batch) on Bridge Course and Teachers Training Package" on 24<sup>th</sup> February, 2016 organized by Department of Gender Studies, NCERT.
- (xxxvii) Resource Person in the workshop for the review of Secondary school Preparatory Programme(SSPP) handbook organized by RMSA Cell, NCERT on 4<sup>th</sup> May, 2016
- (xxxviii) Participated as a Resource Person in conducting " Workshop Based Activities for CPPDPT for Primary Teacher" at KV, Tagore Garden on 22<sup>nd</sup> May, 2016
- (xxxix) Participated in developing Census based National Achievement Survey for classes I to VIII organized by ESD, NCERT during 13-17 June, 2016.
- (xl) Resource Person in the programme entitled "Follow-up study of the Capacity Building Programmes in Science and Mathematics conducted by the NCERT" organized by RMSA Project Cell during 20-22 July, 2016
- (xli) Participated in Development of test item workshop organized by Education Survey Division (ESD), NCERT during 27<sup>th</sup> June -1<sup>st</sup> July, 2016
- (xlii) Participated a Resource Peron in the programme entitled "Promoting Quality Learning in Science at Upper Primary Level in Schedule Tribes (ST) Dominated Districts" organized by DESM, NCERT in 2016-17.
- (xliii) Participated in IBM STEM Summit at CIET, NCERT during 11-13 July, 2016.
- (xliv) Participated in the meeting of Tactile Kit for Introductory Science and mathematics on 13<sup>th</sup> July, 2016 at Conference Room, DEK, NCERT
- (xlv) Act as Resource Person in the programme entitled "Orientation of Key Resource Person of SCERTs/SIEs/RMSA/SSA belonging to ST category dominated areas on preparation and use of Science and Mathematics in 2016-17.
- (xlvi) Resource Person in the workshop entitled "Developments of Items Descriptors and Proficiency Bands for Class X NAS" during 4-6 May, 2016 organized by ESD, NCERT s Kits" at SSA Imphal during 9-11 August, 2016.
- (xlvii) Participated in Item Review-cum- translation Workshop for Classes I -II during 26- 30 August, 2016 organized by DEE, NCERT.

- (xlviii) Participated in the workshop for revision of Bridge Courses (Level I,II and III) at Elementary level during 5 -9 September, 2016 at SSA, Jammu.
- (xlix) Participated in the Question Review of National Achievement Survey of Mathematics at Upper Primary Level organized by ESD, NCERT on 14-10-16.
- (l) Participated as a Member of Examining New Textbooks of the State of Karnataka in 2016-17.
- (li) Participated as a Judge for Judgment at a Central Level Science Exhibition at RPVV Vasant Kunj on 27<sup>th</sup> October, 2016.
- (lii) Member of National Achievement Survey for Classes I to VIII in 2016-17.  
Participated in the Workshop on Item Writing for Class X (Cycle-II) on 29<sup>th</sup> November, 2016 organized by ESD, NCERT.
- (liii) Act as a Resource Person during National Conference in Mathematics Education during 19-20 December, 2016 at RIE, Bhubaneswar.
- (liv) Act as a Resource Persons at K.V. Paschim Vihar on Activity Based Teaching in Mathematics to In-Service PRT on 28-12-16.
- (lv) Act as a Resource Persons at K.V. Dwarka, Sector-12, on Activity Based Teaching in Mathematics to In-Service TGT Teacher on 31-12-16.
- (lvi) Resource Person in “Workshop for Review of Questionnaire tools for pre-test and briefing about the project to the State Functionaries” during 17-19 January, 2017 at BHU, Varanasi.
- (lvii) Participate as a judge in the Inter School Mental Quiz at Amity international School, saket on 24<sup>th</sup> Jan., 2017.
- (lviii) Participated in the Development of “Proficiency Level and Mapping the Class V Cognitive Items with Learning Outcome Framework” organized by ESD, NCERT during 23-27 January, 2017.
- (lix) Resource Person in Administration of Tools at Varanasi Project School during 14-17 March, 2017.
- (lx) Resource Person in “Review of Upper Primary Level Curriculum” at SIE, Allahabad during 25-27 March, 2017.
- (lxi) Act as “Observer for NTS Examination -2017” at Allahabad on 14<sup>th</sup> May , 2017
- (lxii) Ac as Resource Person for Mathematics Teacher’s Workshop at Salwan Public School, Rajinder Nagar, New Delhi on 23<sup>rd</sup> May, 2017.

- (lxiii) Act a Resource Person in the Data Analysis work in the Programme entitled “Promoting Quality of Learning in Science at Upper Primary Level in Two Districts of Uttar Pradesh” during 29 May to 1<sup>st</sup> June, 2017.
- (lxiv) Act as “Observer for CEE -2017 “ at Cuttak , Odisha on 11<sup>th</sup> June, 2017
- (lxv) Act as a Resource Person in “ Promoting Quality of Learning in Science at Upper Primary Level in Two Districts of Uttar Pradesh during 14- 16 June, 2017.
- (lxvi) Act as a Resource Person in “ Promoting Quality of Learning in Science and Mathematics at Upper Primary Level in Two Districts of Uttar Pradesh during 4-7 October, 2017.
- (lxvii) Resource person in the Programme “A Study of remedial teaching programme carried out by the states under RMSA” during 23-25 October, 2017 organized by RMSA Cell, NCERT.
- (lxviii) Act as a Resource person in the programme entitled “ Capacity Building of State Resource Group(SRG) in Science and Mathematics for the State of Chhattisgarh” organized by RMSA, NCERT during 28<sup>th</sup>-30<sup>th</sup> December, 2017
- (lxix) Act as a Resource Person in the programme entitled “ Moderation workshop for National Talent Search examination” during 2-6 January, 2018.
- (lxx) Resource Peron in the Inspection of Kit of Upper Primary Mathematics Kits in Gujarat on 10<sup>th</sup> January, 2018.
- (lxxi) Act as a Resource Person in “Promoting Quality of Learning in Science and Mathematics at Upper Primary Level in Two Districts of Uttar Pradesh during 22-24 January, 2018
- (lxxii) Observer in NTS Examination at KV, IIT Campus, Chennai on 12<sup>th</sup> May, 2018.
- (lxxiii) Act as a Resource Person in ESML Early Mathematics Learning Kit at Harrison Enterprises on 18<sup>th</sup> May, 2018 at Noida, U.P.
- (lxxiv) Act as a Resource Person in SMLK Mathematics Learning Kit at Chinar Scientific Industries, Delhi on 23<sup>rd</sup> May, 2018 at Delhi.
- (lxxv) Participated in the identifying gaps of E-content for the classes I to VIII during 26<sup>th</sup> June to 30<sup>th</sup> June, 2018 at CIET, NCERT.
- (lxxvi) Act as a Resource Person in ESML Early Mathematics Learning Kit at Mit Enterprises, Nirman, Nirman multiarts, Sujako Interiors, Title Display at Ahmadabad, Gujarat during 1-2 August, 2018.
- (lxxvii) Act as a Resource Person in SMLK Mathematics Learning Kit at Chinar Scientific Industries, Delhi on 9<sup>th</sup> August, 2018 at Delhi.

- (lxxviii) Act as a Resource Person in SMLK Mathematics Learning Kit at Chinar Scientific Industries, Delhi on 17<sup>th</sup> August, 2018 at Delhi.
- (lxxix) Resource Person in Capacity Building of KRP's on the Transaction of NCERT Textbooks for the State of Tripura (Elementary Stage) during 26-30 December, 2018.
- (lxxx) Resource Person in Orientation Programme for Assistant Lecturer in Mathematics, organized by Directorate of Educational Research & Training, Govt. of Meghalaya, shilling during 08-11 January, 2019.
- (lxxxi) Resource Person in Monitoring of BRC Level Training organized by SCERT Tripura during 18-22 January, 2019.
- (lxxxii) Work as Resource Person in Inspection of Upper Primary Mathematics Kit on 6<sup>th</sup> February, 2019 at Hans raj Scientific Metal Works, Ambala Cantt., Haryana.
- (lxxxiii) Work as Resource Person in Inspection of Upper Primary and Secondary Mathematics Kit on 6<sup>th</sup> February, 2019 at Ahuja Scientific and Sports Works, Ambala Cantt., Haryana.
- (lxxxiv) Work as Resource Person in Inspection of Upper Primary Mathematics Kit on 6<sup>th</sup> February, 2019 at Jain Scientific Suppliers, Ambala Cantt.
- (lxxxv) Work as Resource Person in Inspection of Upper Primary and Secondary Mathematics Kit on 6<sup>th</sup> February, 2019 at Scientific Instrument Traders , Ambala Cantt., Haryana.
- (lxxxvi) Work as Resource person in "Rain Drop" English Language Learning Kit updating workshop during 13<sup>th</sup> -15<sup>th</sup> February, 2019 organized by DEE, NCERT.
- (lxxxvii) Work as a Resource Person in "Customized Training of Educational Professionals of Afghanistan on Schools Education" during Feb . 18-3<sup>rd</sup> March, 2019 organized by IRD, NCERT.
- (lxxxviii) Participated in " Preparation of the tool for Assessment of textbook of Class 1 to 6 of Andhra Pradesh organized by RIE, Mysore through online cum offline mode during 7-9 October, 2020.
- (lxxxix) Participated in the "Review workshop of Mathematics Working Paper" organized by DESM, NCERT on 13/10/2020.
- (xc) Participated in the "Review workshop of Mathematics Textbook of Classes 1-5" organized by DEE, NCERT during 22-26 February, 2021.
- (xci) Participated in Pre-PAB meeting of Telangana of Samarga Shiksha on 21/05/2021 through webinar.

- (xcii) Participated in the presentation of Sri Satya Sai Vidya Vahini on Learning Outcome based on CWSN content organized by CIET, NCERT on 1<sup>st</sup> June, 2021.
- (xciii) Participated as Resource Person in the Programme entitled 'National Awards for Innovative Practices and Experiments in Education for Schools and Teacher Education Institutions 2020-21' organized by DTE, NCERT on 3<sup>rd</sup> August, 2021.
- (xciv) Participated as Resource Person in the programme entitled " Workshop on review of Mathematics Lab Kits" organized by Division of Educational Kits during 9-13 March, 2023.

**Conference Attended/Participated:**

- (i) Participated in the 84th session of Indian Science Congress during 3-8 Jan., 1997 at University of Delhi, Delhi
- (ii) Participated in the 25th Astronomical Society of India's Session which was held at Physical Research Laboratory, Ahmedabad during Nov.28th -1st Dec., 1997
- (iii) Participated in the " International Instructional Workshop on Wavelets and Applications", Organized by Department of Mathematics, Univ. of Delhi during Aug.16-27, 1999
- (iv) Participated in the workshop of Mathematics (Hands on Geometry, Hyper cubes, Golden Section and Fractal) at India Habitat Centre, New Delhi, 2002
- (v) Attended Faculty Development Programme organized by Amity institute of Training and Development on 1st Feb., 2003
- (vi) Attended an Orientation Programme on Population Education at RIE, Ajmer during 2003-04
- (vii) Participated in the Orientation Programme to Provide Research Support for Conducting Research at RIE, Mysore during 16th - 20th January, 2007 conducted by DERPP, NCERT
- (viii) Participated in group work in Orientation Programme for Master Trainer of KVS, NVS and CBSE affiliated independent schools on the use of New Textbook developed by NCERT for class II, IV and X Mathematics at RIE, Ajmer in Sept., 2007
- (ix) Oriented in Curricular Reform at NIE campus, CIET, NCERT, New Delhi conducted by Curricular Group during June 28 to July 6 and October 24 to Nov.6, 2007
- (x) Participated in the review workshop of Mathematics Textbook of Class VIII during 24th -27th September 2007

- (xi) Participated in the review workshop on syllabus conducted by Curriculum Group, NCERT, 5-6 Jan. 2008
- (xii) Participated in Science and Mathematics Exhibition prepared by students of Rajasthan at Govt. Jawahar Higher Secondary School, Kuchaman City, Rajasthan for State Level Science Exhibition during 10-11 Jan. 2008
- (xiii) Participated in the Development of Pedagogical Material for Class I and II Mathematics, 21-23 May 2008
- (xiv) Participated in workshop of Laboratory Manual of Mathematics for Secondary Stage, 5-12 Aug. 2008
- (xv) Participated in National Teleconference of Early Mathematics as Penalist on 15th October 2008 at IGNOU, Maidan Garhi, New Delhi
- (xvi) Participated in National Resource Group (NRG) meeting under SSA organized by DEE, NCERT on 23rd October 2008
- (xvii) The Learning Kits of Group Arithmetic were tried out at KV Primary School, NCERT Campus during July-Aug. 2008
- (xviii) Participated in National Conference on Assessment and Improvement of Science and Mathematics Education, 13-14 Jan. 2009
- (xix) Participated in the Capacity Building Programme of Programme Evaluation organized by DEE, NCERT during 8-12 August, 2011
- (xx) Participated in the Try Out of Mathematics Kit in the Project Schools of Group Arithmetic in Haryana, Uttarakhand and Chhattisgarh, 2011
- (xxi) Participated in the Orientation of NCERT Faculty in Field Work organized by DERPP, NCERT during 15-17 May, 2012
- (xxii) Participated in the Field Work of Teaching Mathematics at Sr. Sec. Stage at CTS, Herbertpur, Dehradun, 2012
- (xxiii) Participated in vetting of Tools of Classes I and II Mathematics at DEE, NCERT during 29-30 July, 2013
- (xxiv) Participated in the Development of Teaching Material of Mathematics at Higher Secondary Stage during 11-12 March, 2014
- (xxv) Participated in the field work in Haryana Primary School during 20<sup>th</sup> November, 2013- 10<sup>th</sup> March, 2014
- (xxvi) Participated in the Orientation -Cum-Refresher Course for the faculty of NCERT during 1<sup>st</sup> May- 26<sup>th</sup> May, 2014

- (xxvii) Participative in the National Consultative Seminar cum Workshop in Mathematics at CIE, Delhi University on 26<sup>th</sup> July, 2014
- (xxviii) Participated in the programme entitled “Improvement of Science and Mathematics at Upper primary Stage” on 17<sup>th</sup> October, 2014.
- (xxix) Participated in Orientation-Cum-Refresher Course on School Education organized by DTE, NCERT during 22<sup>th</sup> July to 1<sup>st</sup> August, 2015.
- (xxx) Participated as Resource Person in Interaction and Discussion with Principal attending a summer course conducted by NUEPA on 16<sup>th</sup> June, 2015
- (xxxi) Participated in the Development of Bridge Course for ITI Welder an Electrician at CBSE Head QTRS, Preet Vihar on 30<sup>th</sup> July, 2015
- (xxxii) Participated in the Development of Guidelines for School Teachers and School Education Boards on writing varied Types of Questionnaire organized by RMSA Cell, NCERT during 5-7 August, 2015.
- (xxxiii) Participated in the training Programme organized by Division of Educational Research in the Research Methodology Programme during 18<sup>th</sup> - 22<sup>nd</sup> January, 2016.
- (xxxiv) Participated in the Review of Indicators of Elementary Stage in Bhopal organized by Rajya Siksha Kendra of M.P. on 2<sup>nd</sup> February, 2016.
- (xxxv) Participated in the National Conference on Emerging Trends in Science and mathematics Education at CIE, Delhi University during 18-19 February, 2016
- (xxxvi) Participated in the Workshop on Sharing of initial finding of the study “An exploratory study of low performing students in Mathematics in NAS Class VIII Cycle (3)” on 26<sup>th</sup> Feb., 2016.
- (xxxvii) Participated in the Finalization workshop of “Joy in Mathematics” of Primary Stage during 15<sup>th</sup> -17<sup>th</sup> March, 2016 organized by DEE, NCERT
- (xxxviii) Act as a Resource Person in conducting “Workshop Based Activities for CPPDPT for Primary Teacher” at KV, Tagore Garden on 22<sup>nd</sup> May, 2016.
- (xxxix) Participated in development of test item workshop organized by ESD, NCERT during 27<sup>th</sup> June -1<sup>st</sup> July, 2016.
- (xl) Participated in Review of Upper Primary Level Curriculum organized by SIE, Allahabad during 25-26 March, 2017.
- (xli) Member of 44<sup>th</sup> Jawaharlal Nehru National Science, Mathematics and Environment Exhibition (JNNSMEE) for Children- 2017

- (xlii) Member of State Level Science, Mathematics and Environment Exhibition (SLSMEE) for Children- 2017.
- (xliii) Member of the “Guidelines for Individual Students’ Science Box at Upper Primary Stage under RAA” in 2017.
- (xliv) Resource Person in Mathamity at Amity International School, Saket on 29<sup>th</sup> July, 2017.
- (xlv) Act as a Resource Person in “Promoting Quality of Learning in Science at Upper Primary Level in Two Districts of Uttar Pradesh during 14- 31 August, 2017.
- (xlvi) Resource Person in “Amity Tarang 2017” at Amity International School, Saket on 1<sup>st</sup> Nov., 2017.
- (xlvii) Act as a Resource Person in Short Term Courses of Elementary Mathematics Teacher at RIE, Bhopal on 3<sup>rd</sup> Dec., 2017.
- (xlviii) Session Coordinator in the session entitled “Popularization of Mathematics Education and Recent Development” at NERIE Shillong during 21-22 Dec., 2017 in the “ National Seminar on Mathematics Education”.
- (xlix) Member of State Level Science, Mathematics and Environment Exhibition in 2017-18.
- (l) Act as a Resource Person in the Joint Inspection of Upper Primary Mathematics Kits at North Gujarat Sports & Scientific Traders at Patan, Gujarat on 10<sup>th</sup> January, 2018.
- (li) Participated in the Learning Outcome Assessing Discussion on 16<sup>th</sup> February, 2018 at Conference Room, ZH block , NCERT organized by ESD, NCERT.
- (lii) Participated Resource Person in Vigyan Prasara Programme in NCERT during 27- 28 Feb., 2018.
- (liii) Resource Person in “ Capacity Building of Teachers Act as a Resource Person in Inspection of Upper Primary Mathematics Kits on 26<sup>th</sup> February, 2018 at Chinar Scientific Industries at Pratap Nagar, Delhi .
- (liv) Act as a Resource Person in Inspection of Upper Primary Mathematics Kits on 12<sup>th</sup> March, 2018 at Chinar Scientific Industries at Pratap Nagar, Delhi.
- (lv) Act as a Resource Person in Inspection of Upper Primary Mathematics Kits on 13<sup>th</sup> March, 2018 at Harrison Enterprises, at Noida, U.P.
- (lvi) Act as a Resource Person in Inspection of Upper Primary Mathematics Kits on 13<sup>th</sup> March, 2018 at Abhilasha Commercial (P) Ltd, at Noida, U.P.



- (lvii) Resource Person on Contextualization of Curriculum in Science, Mathematics, Social Sciences and Languages” during 14-16 March, 2018 organized by DCS, NCERT.
- (lviii) Member of 45<sup>th</sup> Jawaharlal Nehru National Science, Mathematics and Environment Exhibition (JNNSMEE) for Children- 2018.
- (lix) Member of State Level Science, Mathematics and Environment Exhibition (SLSMEE) for Children- 2018.
- (lx) Member of National Conference on Ancient Indian Knowledge: Science and Technology in 2018-19.
- (lxi) Member of Coordination of Indian Knowledge, Science, Mathematics and Technology Conference in 2018-19.
- (lxii) Participated in the Discussion “World Development Report 2018: Learning to Realize the Promise of Education” at NUEPA on 10<sup>th</sup> April, 2018.
- (lxiii) Participated in the Mapping workshop in CIET during 7-11 May, 2018.
- (lxiv) Participated Resource Person in the Development of Learning Outcomes at Secondary and Senior Secondary Stage during 16-18 May, 2018 organized by RMSA, NCERT.
- (lxv) Participated in Sub-Regional Meeting on Integrating SDG 4.7 and Global Citizenship Education into Teacher Training in South Asia during 26-28 June, 2018 organized by IRD, NCERT at CIET, NCERT Campus.
- (lxvi) Participated in the workshop entitled “Workshop on Experiential Learning” organized by ESD, NCERT during 11-12 July, 2018.
- (lxvii) Resource Person in the programme entitled “Curriculum Development and Analysis for the State of Meghalaya” during 23-27 July, 2018.
- (lxviii) Resource Person in Training of KRP on Mathematics at Secondary Level organized by SCERT Tripura at Agartala during 6-10 August, 2018.
- (lxix) Resource Person in Orientation of TGTs (from SC dominated areas) on preparation and use of Mathematics Kit during 31<sup>st</sup> July to 3<sup>rd</sup> August, 2018.
- (lxx) Participated in the Interaction with M.Ed. Students from Lal Bahadur Shastri Rashtriya Sanskrit Vidyapeeth on 10<sup>th</sup> October, 2018.
- (lxxi) Participated in NNSMEE at Raipur during 14-18 October, 2019.
- (lxxii) Participated as a judge at Govt. Co-ed Sr. Sec. School, Sec-2, Dwarka on 23<sup>rd</sup> Oct. 2019.
- (lxxiii) Act as Resource Person in NISTHA programme in Udaipur, Rajasthan during 20-21, October, 2019.

- (lxxiv) Participated in Experiential Learning Workshop organized by RMSA, NCERT during 6-7 Nov., 2018.
- (lxxv) Act as Resource Person in Inspection of Kit at Ambala, Haryana on 14<sup>th</sup> Nov., 2019.
- (lxxvi) Act as Resource Person in NISTHA programme in Meerut, U.P. during 21-22, Nov. 2019.
- (lxxvii) Act as Resource Person in NISTHA programme in Hyderabad, Telangana during 4-5 Dec. 2019.
- (lxxviii) Act as Resource Person in NISTHA programme in Lucknow, U.P. during 12-13 Dec. 2019.
- (lxxix) Act as Resource Person in NISTHA programme in Lonavala, Maharashtra during 21-23 Dec. 2019.
- (lxxx) Resource Person in Orientation Programme for Assistant Lecturers in Mathematics from Higher Secondary Schools of Meghalaya during 8-11 January, 2019 organized by DERT, Shillong.
- (lxxxi) Act as Resource Person in NISTHA programme in Patna , Bihar organized by SCERT, Patna, Bihar during 11-12 Dec. 2020.
- (lxxxii) Act as Resource Person in NISTHA programme in Ranchi, Jharkhand organized by SCERT, Ranchi, Jharkhand during 18-19 Jan. 2020.
- (lxxxiii) Act as Resource Person in NISTHA programme in Bhopal, organized by Rajya Shiksha Kendra Bhopal, during 30-31 Jan . 2020.
- (lxxxiv) Act as Resource Person in NISTHA programme in Gandhi Nagar, Ahmedabad organized by SCERT, Ahmedabad, Gujarat during 4-8 Feb. 2020.
- (lxxxv) Act as Resource Person in NISTHA programme in Varanasi, U.P. organized by DIET, Varanasi, U.P. during 11-15 Feb. 2020.
- (lxxxvi) Act as Resource Person in NISTHA programme in Allahabad, U.P. organized by SIEMAT, Allahabad in 2020.
- (lxxxvii) Work as Resource Person in Inspection of Upper Primary Mathematics Kit on 6<sup>th</sup> March, 2019 at Chinar Scientific Ltd. at Pratap Nagar, Delhi.
- (lxxxviii) Participated as a Resource Person in the in the Review Workshop of Mathematics Education on 13/10/2020 organized by DESM, NCERT.
- (lxxxix) Participated in the "Preparation of the tool for Assessment of Textbook of class 1-6 of Andhra Pradesh during 7-9 October, 2020 organized by RIE Mysore through online and offline mode.

- (xc) Participated in the review workshop of Mathematics textbook of Classes 1-5 during 22-26 February, 2021 organized by DEE, NCERT.
- (xci) Participated in Science Day programme organized by DESM, NCERT on 27/02/2021.
- (xcii) Participated in Science Day programme organized by NERIE, NCERT on 28/02/2021 through webinar.
- (xciii) Participated as a advisor as an internal member in the Departmental Advisory Meeting of Gender Studies Department on 28/01/2021
- (xciv) Participated in Pre-PAB of Telangana on 21/05/2021 through online mode.
- (xcv) Participated in PAB of Assam on 22/06/2021 through online mode.
- (xcvi) Participated in webinar on Translating NEP-2020 for preparing future Indian Youth on 3<sup>rd</sup> July, 2021.
- (xcvii) Participated in "Orientation on Implementation of NISTHA Secondary Level" on 17/07/2021 organized by CIET, NCERT by webinar
- (xcviii) Participated in the programme entitled "Celebrating One Year of National Education Policy 2020" on 29/07/2021 through Virtual Conference organized by Ministry of Education, Govt. of India.
- (xcix) Participated in National Webinar " Towards an Equitable and Inclusive Society : Realizing the Goals of NEP 2020" on 30/07/2021
- (c) Participated in the popular lecture entitled " National Education Policy-2020 special reference Academic Credit Bank System" organized by NIT, Arunachal Pradesh on 08/08/2021 by webinar.
- (ci) Participated as a resource person in the programme entitled" Capacity Building of KRPs on Learning Outcomes in Science and Mathematics at Elementary Level for the North Eastern States" during 22-26 Nov. 2021 on online mode.
- (cii) Participated in "State Level Science, Mathematics and Environment Education" in Guwahati, Assam on 27<sup>th</sup> May, 2022 organized by SCERT, Guwahati, Assam.
- (ciii) Participated in the Bhartiya Bhasa Programme at IIT Delhi, Vishwakarma Bhawan on 3<sup>rd</sup> June, 2022.
- (civ) Participated in Rashtriya Bal Vaigynik Pradarshani (RBVP) -2022 in Guwahati during 22-27 November, 2022.

**Programme Coordinator :**

- (i) Training of KRPs in Teaching Mathematics at Sr. Sec. Level for the state of Jammu & Kashmir during August 29 to September 2, 2005
- (ii) Training of KRPs on Improvement of Content Competence in Mathematics at Sr. Secondary Level based on New Text Books during 7th – 11th November, 2005
- (iii) Training Programme for KRPs in Teaching Mathematics at Sr. Sec. Level for the states of Jammu and Kashmir and Haryana during 13th – 17th November, 2006
- (iv) The development of Teachers Training Package of Class I and II Mathematics during 26th -28th June, 2008
- (v) Review of the draft material of Teachers Training during 3rd – 5th October, 2008
- (vi) Review of Learning Material and User’s Manual during 13th -14th December, 2008
- (v) Teachers Training Programme at Haridwar for Primary Teachers of Uttarakhand States during 3rd- 5th January , 2009
- (vi) Teachers Training Programme of Andhra Pradesh Teachers at NIE Campus during 16th-19th March , 2009
- (vii) Advisory Committee Meeting of Group Arithmetic on 24th March, 2009
- (viii) Workshop to simplify the language of Teachers Training Manual during 15th - 16th April, 2009
- (ix) Workshop to simplify the language of Teachers Training Manual during 20th – 22nd May, 2009
- (x) Activity based Teaching of Mathematics at Upper Primary Level during 25-29 October, 2010
- (xi) Teacher Training Programme of Classes I and II Mathematics, 2011
- (xii) Orientation Programme of Upper Primary and Secondary Level Mathematics Training during 18-22 Feb., 2013
- (xiii) Activity based training of Mathematics during 10-13 June, 2014
- (xiv) Design and Development of Mathematics Kit for Higher Secondary Stage, 2014
- (xv) Development of Audio-Video Material for Activity in Mathematics at Upper

Primary and Secondary Stages, 2015

- (xvi) Development of Hindi Version of Manual of Secondary Mathematics Kit, 2015
- (xvii) In-service Training Programme for Mathematics Teachers (TGTs) for Secondary Level from Central Tibetan Administration w.e.f. 5 May- 14 May, 2015
- (xviii) In-service Training Programme for Mathematics Teachers of Middle School Level from Central Tibetan Administration w.e.f. 15 May- 4 June, 2015
- (xix) Development Audio-Video Material for Activities in Mathematics at Upper Primary and Secondary Stage in 2015-16.
- (xx) Key Resource Person in Mathematics at Upper Primary stage from Schedule Cast Dominated Areas in 2015-16.
- (xxi) Key Resource Person in Mathematics at Higher Secondary Stage in 2015-16.
- (xxii) MOOCs online course for Class IX-X Mathematics in 2015-16.
- (xxiii) Concept Analysis of Mathematics and Science at Upper Primary Stage in 2015-16.
- (xxiv) Orientation of KRP's in Teaching Learning of Mathematics at Upper Primary Stage from Minority Dominated Areas of Uttar Pradesh in 2016-17.
- (xxv) Development of Audio-Video material for activities of Mathematics at Upper Primary and Secondary stage (Hindi Version) in 2016-17.
- (xxvi) Development of E-resources in Mathematics at Secondary Stage in 2016-17.
- (xxvii) Development of Hindi Version of Mathematics Laboratory Material at Higher Secondary Stage in 2016-17.
- (xxviii) Development of E-resources in Mathematics at Upper Primary Stage in 2016-17.
- (xxix) Development of E-resources in Mathematics at Sr. Secondary Stage in 2016-17.
- (xxx) Programme Coordinator of Development of Tactile books in Mathematics at Upper primary Stage in 2017-18.
- (xxxi) Programme Coordinator of Development of E-resources in Mathematics at Secondary Stage in 2017-18.
- (xxxii) Programme Coordinator of the training Programme entitled " Capacity Building of Key Resource Person in Teaching -Learning of Mathematics at Upper Primary Stage from Minority dominated areas in 201-18.
- (xxxiii) Programme Coordinator of Review of Textbook : Mathematics - Classes VI to VIII in 2017-18.

- (xxxiv) Programme Coordinator of 7<sup>th</sup> National Conference of Mathematics Education organized during 20-22 December, 2018 in NCERT.
- (xxxv) Course Coordinator of MOOCS on SWAYAM on Mathematics in 2018-19.
- (xxxvi) Preparation for Mapping of QR Codes given in the concerned Textbooks prepared by the Departments (Classes VI-IX, Mathematics in 2018-19.
- (xxxvii) Road Map Programme of Learning Outcome of Upper Primary Stage of Mathematics in 2020-21.
- (xxxviii) Online Courses Swayam Class XI Part-I Mathematics in 2020-21.
- (xxxix) Online Courses Swayam Class XI Part-II Mathematics in 2020-21.
- (xl) Online Courses Swayam Class XII Part-I Mathematics in 2020-21.
- (xli) Development of e-content of Secondary and Higher Secondary Mathematics related to e-Vidya Programme 2020-21
- (xlii) Course Coordinator of Massive Open Online Courses (MOOCS) of Mathematics XI, Part-1,
- (xlii) Mathematics XI, Part-2, Mathematics XII, Part-1 on SWAYAM from November 2020 to September 2021
- (xliii) State Level Science, Mathematics and Environment Exhibition for Children 2021-22.
- (xliv) State Level Science, Mathematics and Environment Exhibition for Children 2022-23.

**Teaching:**

- (i) Taught B.Sc.-B.Ed. IV year Students at RIE, Ajmer from 3rd February 2004 to 20th September, 2007
- (ii) Taught at Amity School of Engg. & Technology (GGSIP Univ.) from Sept. 2002 to Nov. 2003
- (iii) Taught at BLS Institute of Management (GGSIP Univ.) from Aug. 2001 to April 2002
- (iv) Taught at National School of Engg. & Technology (UP Tech. Univ.) Jan. 2001 to March 2001

**Innovation:**

- (i) Member of Development Team of Early Primary Mathematics Learning Kits in Group Arithmetic, DESM (2009-2011)
- (ii) Member of Development Team of Higher Secondary Mathematics Kit, DEK (2013-2015)
- (iii) Member of Development of E-resources in Mathematics at Upper Primary Stage in 2017-18.
- (iv) Member of Development of E-resources in Mathematics at Higher Secondary Stage in 2017-18.
- (v) Modification and Development of Mathematics Laboratory in 2022-23.

**Course Curriculum Development:**

- (i) Member of development Team of Teachers Training Manual of Class I and II Mathematics (2010)
- (ii) Member of development Team of Exemplar Problem of class VI Mathematics (2010)
- (iii) Member of development Team of Laboratory Manual in Mathematics at Higher Secondary Stage(2010)
- (iv) Member of development Team of Teacher Training Manual for Kasturba Gandhi Balika Vidyalaya (2010)
- (v) Member of Development Team of Laboratory Manual of Mathematics at Elementary Stage(2011)
- (vi) Member of Development Team of Source Book of Mathematics (Class VI-VIII)(2013)
- (vii) Member of Development of Pedagogical Content Knowledge of Mathematics at Primary Stage in 2015-16.
- (viii) Member of Learning Outcomes Development Mathematics at Upper Primary Stage in 2016-17.

- (ix) Member of Module on Mathematics for Textbook on Knowledge, Textbook and Practices in India (KTPI) in 2018-19.
- (x) Member of Development of Tactile books in Mathematics at Upper Primary Stage in 2018-19.
- (xi) Team member of Development of Learning Outcome Secondary Stage (2019).
- (xii) Team member of the Development of Mathematics Education Paper in 2020.
- (xiii) Team member of Development of NISTHA online Hindi version of Elementary Stage (2020).
- (xiv) Team member of Development of Alternate Academic Calendar of Curriculum for Upper Primary, Secondary and Sr. Secondary Mathematics 2020-21.
- (xv) Team member of Development of NISTHA Secondary Mathematics Module (2021).
- (xvi) Member of Editorial Board of Proceedings of " 7<sup>th</sup> National Conference on Mathematics Education", Dec. 2022.

**Live Telecast on NCERT official Channel :**

- (i) Presented a Live Discussion on Mathematics on 5<sup>th</sup> January, 2018 on Swayam Prabha Kishore Manch.
- (ii) Live Discussion on Mathematics on 20<sup>th</sup> June, 2018 at SWAYAM PRABHA.
- (iii) Live Discussion on Mathematics on 27<sup>th</sup> July, 2018 at SWAYAM PRABHA.
- (iv) Live Discussion on Mathematics on 28<sup>th</sup> September, 2018 at SWAYAM PRABHA.
- (v) Live Discussion on Mathematics on 5<sup>th</sup> October, 2018 at SWAYAM PRABHA.
- (vi) Live Discussion on Congruence of Triangle on 27<sup>th</sup> Dec. 2019.
- (vi) Basic Geometrical Ideas of Class VI on 5<sup>th</sup> June, 2020.
- (vii) Basic Geometrical concept on Elementary Shape Class VI on 3<sup>rd</sup> July, 2020
- (vii) Integer -I class VI on 23<sup>rd</sup> July, 2020
- (viii) Decimals -I Class VI on 21<sup>st</sup> October, 2020

**Resource Person in National Workshop**

- (i) Resource Person in " National Seminar on Mathematics Education" at NERIE Shillong during 21-22 Dec., 2017.
- (ii) Resource Person in Virtual National Workshop on "Development of Learning Resources in Science and Mathematics Education organized by Department of Education (CIE), University of Delhi on 20<sup>th</sup> February, 2021



### **Chief Guest/Guest of Honour /Session Chair/Panelist/Advisor**

1. Chaired the session entitled “Mathematics in School Curriculum-3” at NERIE Shillong during 21-22 Dec., 2017 in the “National Seminar on Mathematics Education” .
2. Guest of Honour in the programme “Online National Webinar on Learn Mathematics Easily” organized by Gujarat Chapter of RSTF, NCTS, APJAKNCYS, AIRMC on 18<sup>th</sup> July, 2020 through webinar.
3. Guest of Honour in the programme “Raman National Live E-QUIZ” organized by Tripura Chapter of RSTF, NCTS, APJAKNCYS, AIRMC on 19<sup>th</sup> July 2020 through webinar.
4. Guest of Honour in the programme “Maths Workshop for Gujarat Teachers” organised by Community Science Centre, Dahod and NCTS , AIRMC during 22/23 July 2020 through webinar.
5. Guest of Honour in the programme “Vedic Maths National Webinar” organised by Tripura Chapter of RSTF, NCTS, APJAKNCYS, AIRMC during 9-10 Aug 2020 through webinar.
6. Guest of Honour in the programme “Ramanujan National Teacher Training “ organised by J &K Chapter of RSTF, NCTS, APJAKNCYS, AIRMC on 7<sup>th</sup> Aug 2020 through webinar.
7. Guest of Honour in the programme “Online Grand Opening Ceremony on the Occasion of 101<sup>th</sup> Anniversary of Dr. Vikram Sarabhai” organised by Usha National Children’s Garden and Science Research Centre, Bhusawal (M.H.) and RSTF (Gujarat) on 12<sup>th</sup> Aug 2020 through webinar.
8. Guest of Honour in the programme “Sir J C Bose International Science Puppetry Film Festival” organised by Tripura Chapter of RSTF, NCTS, APJAKNCYS, AIRMC on 30<sup>th</sup> Aug 2020 through webinar.
9. Guest of Honour in “Gujrat State Webinar on Vedic Mathematics” organized by Jamnagar District Chapter, Gujrat of RSTF, NCTS, APJAKNCYS, AIRMC on 02/09/2020 through Webinar.
10. Participated as a Guest in National Webinar on Joyful Learning Maths organized by National Council of Teacher Scientists (AP) India and All India Ramanujan Maths Club India on 25/09/2020.
11. Chief Guest in “ Three Day National Level Continuous professional Development Programme (CPDP)” on 20/10/2020 organized by RAA, DIET Shimla and Himachal State Ramanujan Maths Club HPSRMC on Webinar.

12. Guest of Honour in the programme “National Webinar on Different Technology Toy Maths Model” organised by Kerala Chapter of RSTF, NCTS, APJAKNCYS, AIRMC on 25<sup>th</sup> November, 2020 through webinar.
13. Chaired the session on the themes connecting past with present Mathematics Education in the 9<sup>th</sup> National Conference on Mathematics Education organized by National Council of Education Research and Training, Regional Institute of Education, Bhopal during 20-22 December, 2020.
14. Participated as a panelist in panel discussion on the theme National Education Policy- 2020 the session on the themes connecting past with present Mathematics Education in the 9<sup>th</sup> National Conference on Mathematics Education organized by National Council of Education Research and Training, Regional Institute of Education, Bhopal during 20-22 December, 2020.
15. Chief Guest National Mathematics Day on 22/12/2020 organized by RAA, DIET Shimla and Himachal State Ramanujan Maths Club HPSRMC on Webinar.
16. Chairperson and Lead Talk in the 9<sup>th</sup> National Conference on Mathematics Education during 20-22 December, 2020 organized by RIE Bhopal.
17. Guest of Honour in the programme “ National Webinar on Miracles with math Table ” organised by NCTS, APJAKNCYS, AIRMC during 16-17 January 2021 through webinar.
18. Guest of Honour in the programme entitled “ National Children Maths Academy, India on 28/01/2021 through Webinar organized by Ramanujan Maths Club.
19. Participated in online Maths Convention 2021 on 12<sup>th</sup> February as Guest and deliver a talk organized by Ramanujan Maths Club.
20. Participated as Chief Guest in the programme entitled “The Prize Felicitation Function For Bronze Medal winners (All Level) organized by National Council of Teachers Scientists by webinar on 26<sup>th</sup> February, 2021.
21. Participated as Chief Guest in the programme entitled “Pre-Conference workshop on Geogebra” organized by IGCI 2021 Telangana Team by webinar on 7<sup>th</sup> March, 2021.
23. Participated as Guest in the programme entitled “State Level Science Exhibition ” organized by Rajasthan SCERT by webinar on 25<sup>th</sup> March, 2021 by virtual meet.
24. Participated as Expert Member on Independent Committee for Selection of Slogan and Poster and Story Narration constituted by K.V.S., R.O. Gurgaon on 27/10/2020 by virtual meet.

25. Participated as a judge in Science Exhibition at regional Level organized by Dr. Rajendra Prasad KV, President Estate on virtual mode on 07/04/2021.
26. Guest of Honour in the programme "Launching Programme on NCTS RSTF APJAKNCYS Sarabhai Teacher Scientist National Award-2021" on 21/06/2021 organized by National council Teacher scientist through webinar.
27. Participated as a Guest in the programme entitled "NCTS Felicitation Ceremony 2021" of Balapur Primary School, Amreli, Bagasar, Gujrat Teachers on 18/07/2021 by webinar.
28. Participated as a Guest in the programme entitled "India International Sarabhai Student Scientist Award 2021 Brochure Launching Ceremony on Moon Landing Day 2021 of Tripura Chapter on 20/07/2021.
29. Participated as a Guest in the programme entitled 'Sarabhai Student Scientist Award 2021' on 20/08/2021 organized by National Council of Teacher Scientist (Odisha & Gujarat), India and All India Ramanujan Maths Club India
30. Participated as a Guest in the programme entitled 'NCTS Felicitation Ceremony 2021' on 18/08/2021 organized by Tripura Chapter, Raman Science & Technology Foundation, National Council of Teacher Scientist, APJ Abdul Kalam National Council of Young Scientist, Science Writers' Association of Tripura, India.
31. Participated as a Guest in the programme entitled 'Ramanujan Amrit Bharat Ganit Yatra 2021' on 29/10/2021 organized by All India Ramanujan Maths Club held at Smt. S D Lakshmi Girls Sr. Sec. School, Khari Baoli, Delhi.
32. Participated as a judge in the Mathematics Seminar of Apeejay School, Saket, New Delhi as apart 'Dr. Satya Paul Memorial Mathematics Quest 2021' on 21/08/2021.
33. Participated as a Chief Guest in the programme entitled 'Dr. Satya Paul Memorial Mathematics Quest 2021' Valedictory Ceremony on 21/08/2021.
34. Participated as a Guest in the programme entitled 'National Webinar On Fun With Maths' on 29/08/2021 organized by National Council of Teacher Scientist (Odisha & Gujarat), India and All India Ramanujan Maths Club India
35. Participated as a Guest in the programme entitled '15<sup>th</sup> Gujarat State Maths Convention 2021' on 26/09/2021 organized by All India Ramanujan Maths Club, Gujarat, India.
36. Participated as a Guest in the programme entitled 'Celebration of International Day of Scientific Culture & Launching of 2<sup>nd</sup> International Sir J C Bose Science Math Puppetry Film Festival 2021' on 28/09/2021 organized by Tripura Chapter of National Scientist, India.

37. Participated as a Guest in the programme entitled 'Har Ghar Bal Kalam', 2021 on 15/10/2021 organized by All India Ramanujan Maths Club, Gujarat, India.
38. Participated as a Guest in the programme entitled 'Celebration of J C Bose Birth Anniversary & Science Puppetry' on 30/11/2021 organized by Tripura Chapter of National Scientist, India
39. Presented a Inaugural Address in the Workshop on "Innovative Teaching : Mathematics" for Teachers on 22<sup>nd</sup> December, 2021 organized by National Science Centre, Delhi a unit of the National Council of Science museum, Ministry of Culture, Govt. of India in online mode.
40. Chaired a session entitled "Theme- Professional Development of Mathematics Teachers" in 10th National Conference on Mathematics Education during 20-22 Dec., 2021 through online mode organized by Regional Institute of Education (NCERT), Mysuru.
41. Participated as a judge for Inter Amity Mental Math Competition for Class 7 on 19th January 2021 organized by Amity International School, Vasundhara, Ghaziabad, U.P.
42. Participated as a Guest of Honour in the programme entitled 'Celebration of 75 Lecture Series on the Occasion of Amrut Bharat Ganit Mahotsav' on 26/01/2022 organized by Raman Science Technology Foundation, India
43. Participated as a Guest in State Level Science, Mathematics and Environment Exhibition for Children 2021-22 (SLSMEE 2021-22) organized by SCERT, Goa at V.D & S.V. Wagle High School, Mangeshi, Ponda, Goa on 14/03/2022
44. Advisor of Dr. APJ Abdul Kalam India International Students Scientist Innovation Award 2022 of Tripura Chapter.
45. Participated as a Guest on 27<sup>th</sup> July in the programme entitled " Dr. APJ Abdul Kalam India International Students Scientist Innovation Award 2022 of Tripura chapter in online mode.
46. Participated as a Guest on 12<sup>th</sup> August, 2022 in the programme entitled " 3<sup>rd</sup> India International Sarabhai Students scientist Award " organized by DASA, India of Tripura chapter in online mode.
47. Participated as Guest at Sajalpur of Madhya Pradesh State Level Science Exhibition on 21<sup>st</sup> September, 2022.
48. Participated as a Guest on 25<sup>th</sup> September, 2022 in the programme entitled "International Sir J C Bose Sciene Math Puppetry Film" organized by DASA, India, Tripura Chapter online mode.

49. Participated as a Guest on 15<sup>th</sup> October, 2022 in the programme entitled “ Dr. APJ Abdul Kalam International Students Scientist Innovation Award” organized by DASA, India of Tripura chapter in online mode.
50. Participated as a Guest on 3<sup>rd</sup> Dec. , 2022 in the programme entitled “ International Sir J C Bose Science Math Puppetry Film” organized by DASA, India, Tripura Chapter on online mode.
51. Co- Chair the session in the 11<sup>th</sup> National Conference on Mathematics Education during 21-22 Dec. 2022 at RIE, Bhubaneswar.
52. Participated as a Chief Guest in the programme State Level Science, Mathematics and Environment Exhibition for Children 2022-23 at Kautilya Sarvodaya Vidyalaya, Chirag Delhi on 02-02-2023.

**Overseas Academic Presentation/Participation:**

- (i) Delivered a talk on Nonlinear Dynamics and Chaos in the Shiraz University, Shiraz, Iran during 1<sup>st</sup> - 5<sup>th</sup> Sept. 2003
- (ii) Participated in Capacity Building Programme under TC Fund of SSA at
  - (a) Institute of Education, University of London during April 20<sup>th</sup> - May 1<sup>st</sup>, 2009
  - (b) Cambridge University during 5<sup>th</sup> -8<sup>th</sup> May, 2009
  - (c) National Foundation of Education Research, UK, during May 11<sup>th</sup> - 14<sup>th</sup>, 2009.
- (iii) Participated in the 2010 Annual CES Conference 2010 during 2-5 May,2010, Victoria Conference Centre, B.C. Canada
- (iv) Training Programme in the area of Programme Evaluation under TC Fund of SSA at
  - (a) Faculty of Education, University of Ottawa, Ottawa, Canada during 7-11 May, 2010
  - (b) Evaluation Centre, Western Michigan University, Kalamazoo, Michigan, U.S.A. during 14-18 May, 2010
  - (c) University of California, Los Angles, U.S.A. during 20-21 May, 2010

**Life Member :**

- (i) Astronomical Society of India
- (ii) Rajasthan Ganit Parishad
- (iii) The Association of Mathematical Teachers of India
- (iv) Vijana Parishad of India

**Award:**

Aryabhata Award-2019, awarded by Ramanujan Maths Club, Gujarat on 10<sup>th</sup> Feb. 2019 at Arpit Institute of Science & Technology- Rajkot, Gujarat.