



**Textbook of Mathematics
for Class 3**



0333

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

**राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING**

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Textbook of Mathematics for Class 3

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Foreword

The Foundational Stage in school education, as envisaged by the National Education Policy 2020, serves as the cornerstone for the holistic development of children. It enables them not only to imbibe the invaluable *samskaras* rooted in our country's ethos and constitutional framework, but also to acquire basic literacy and numeracy. This foundation equips them to transition seamlessly into the more challenging Preparatory Stage.

The Preparatory Stage acts as a bridge between the Foundational and the Middle Stages, spanning three years from Grade 3 to Grade 5. The education provided during this stage builds upon the pedagogical approaches of the Foundational Stage. While the play-way, discovery, and activity-based learning methods continue, children are also introduced to textbooks and more formal classroom settings. This introduction aims not to overwhelm but to establish a foundation across curricular areas, promoting holistic learning and self-exploration through reading, writing, speaking, drawing, singing, and playing. This comprehensive approach encompasses physical education, art education, environmental education, languages, mathematics, basic science, and social science. This comprehensive approach ensures children are well-prepared both at the cognitive-sensitive and physical-*pranic* (emotional) levels to effortlessly transition to the Middle Stage.

The textbook, *Maths Mela* for Grade 3 Mathematics is meticulously designed to align with these objectives. It adheres to the recommendations of the National Education Policy 2020 and the National Curriculum Framework for School Education 2023. The textbook emphasises conceptual understanding, critical thinking, creativity, values and dispositions essential for this developmental stage. It incorporates cross-cutting themes such as inclusion, multilingualism, gender equality, and cultural rootedness integrating appropriate ICT and school-based assessments. The engaging content and activities are designed to captivate students and encourage peer group learning, thus enriching the educational experience for students as well as teachers.

It is crucial to remember the pedagogical focus of the textbook emphasising understanding, critical thinking, reasoning, and decision making. Children's innate curiosity at this stage should be nurtured by addressing their questions and designing activities based on core learning principles. While the play-way method continues, the nature of toys and games used for teaching evolves to enhance engagement rather than mere attraction.

While this textbook is valuable, children should also explore additional resources on the subject. School libraries should facilitate this extended learning, and parents and teachers should support their endeavours.

An effective learning environment motivates students, keeping them engaged and fostering curiosity and wonder vital for learning.

With confidence, I recommend this textbook to all students and teachers at the Preparatory Stage. I extend my gratitude to everyone involved in its development, hopeful that it will meet expectations. As NCERT remains committed to systemic reforms and improving publication quality, we welcome feedback to refine the textbook content.

New Delhi
31 March 2024

DINESH PRASAD SAKLANI
Director
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Research and Training

About the Book

The book *Maths Mela* for Class 3 has been developed based on the recent documents National Education Policy (NEP) 2020 and National Curriculum Framework for School Education (NCFSE) 2023. They aim to ensure that all children achieve basic numerical skills and abilities to think mathematically and logically, solve problems, develop intuitions regarding quantities and reasons, and feel a sense of joy, wonder, and curiosity. The Preparatory Stage specifically focuses on the development of conceptual ideas about numbers, shapes, and spatial relationships, measurement and data handling, procedural skills and fluency and computational thinking.

In light of this, the book for Grade 3 is designed to support learners consolidate their learnings in the Foundational Stage and make progress towards dealing with more abstract ideas. The chapters of the book cover the foundational ideas of Mathematics: whole numbers and operations, introduction to fractions, shapes and spatial relationships, measurement (length, weight, capacity, time), and introduction to data handling. While each chapter has a particular theme (building on earlier ideas and making connections to other ideas), the ideas will recur throughout the book.

We firmly believe that young learners are capable of reasoning, thinking and problem solving in different ways. Therefore, the book provides several occasions for identifying and noticing ideas and relationships across ideas, giving examples and counter-examples to statements, creating objects using mathematical ideas, measuring and quantifying, estimating and solving problems. There are also opportunities to hone one's arithmetic skills through bare exercises, games, and puzzles. At some places in the chapter, such opportunities have been provided under the section 'Let us Play'. Another important purpose behind games and puzzles is to provide learners a stress-free and joyful learning. Most of these need not be assessed. Some tasks are aimed towards 'computational thinking' where learners are expected to observe and articulate

patterns and find exhaustive solutions and solutions under different constraints.

We also believe that learners should develop a liking for Mathematics. The chapters of this textbook provide several enjoyable activities, tasks, games, and puzzles that build on children's intuitions and tap on to their experiences in the world around them. These have been given under the section 'Let us Do' at many places in the chapters. These are sometimes used for making an entry to the concept and at other times provide opportunities to consolidate the ideas. The narrative in the chapters is supported through vivid illustrations, which are also integral to the tasks. We hope that this will allow learners to read pictures and use them for developing important mathematical ideas. While the use of appropriate mathematical vocabulary and ways of communicating thoughts is exemplified in the chapters, linguistic instructions and explanations are kept to the minimum, so that learners can also read and make sense of the book.

Mathematics is an integrated body of knowledge, with a connected and coherent set of ideas. It can be built logically on commonly shared assumptions. Mathematical thinking and reasoning are an important part of learning mathematics. The book attempts to move away from rote memorization of rules and procedures which kill learners' curiosity and burdens them. It rather pushes learners to explore and discover important mathematical ideas. The sections named 'Let us Think', 'Let us Explore', and 'Let us Discuss', included at various places, aim at keeping learners curious to reason out their thinking. These will give them reasons and insights that can be used to remember ideas and apply ideas flexibly and creatively, making further learning easier. It is important to engage with these processes of Mathematics so that learners can go beyond routine mathematical problems confidently and without fear and anxiety. We hope that the carefully chosen learning activities will help them make sense of the ideas, develop capacities to solve problems, experience wonder and joy in the process, and be curious about the world of mathematics.

We believe that the time available for children to work on problems and share their solutions and ideas will be crucial to achieve the objectives of NEP 2020 and NCFSE 2023. The book carries several suggestions for appropriate activities and

experiences (in class and in and around the home) to develop mathematical ideas. Teachers' and parents' support in changing conditions of learning for our children will be very important to achieve the dreams of a better and more confident nation.

The book also advises on the making of simple inexpensive concrete materials for learners to work with, and develop and communicate their thinking. A few perforated sheets for some of the tasks in the chapters are provided at the end of the book. There are some more ideas in the Teacher's Notes for activities and materials. The chapters also show a gradual movement from the use of materials to the use of pictures and making schematic diagrams to make sense of the situation and strategise ways forward. The book tries to build models for the ideas using materials and pictures so that learners can use them for their thinking independently. We would sincerely urge teachers and parents to use the sequence of ideas suggested in the book for teaching and not to rush to rules and procedures. When children develop a better understanding, they will be in a better position to appreciate the rules and procedures. Similar care is also to be taken up by parents and elder siblings who may help their wards in learning through this book. 'Teacher's Note' may help teachers and parents in appropriately enhancing the child's learning.

Several activities and tasks in the book also require that children talk and discuss their ideas. Learning will significantly improve in a classroom that welcomes and respects learners' ideas. They will see different ways of thinking and use ideas, and alternative solutions leading to better and independent solutions over a period of time. They will get opportunities to scrutinise each other's solutions and develop fluency with mathematical language, symbols, and procedures. These will also serve as good assessments of learning for the teacher and also provide feedback to them. The exercises given in the book are also examples of how learners can be assessed. Assessment should be done in multiple forms— using materials and pictures, problem situations and bare problems, activities, creating objects, and sharing and explaining solutions. The book provides enough opportunities for adaptive assessment, assessment for learning, and assessment as learning while the child is learning and is engaged in different activities. Teachers can note down their observations while the learners discuss their ideas, replying to the questions asked, and explaining the

reasoning for the answer. Such records can be included in the learner's portfolio. All ideas in the book have been concluded with some paper pen tasks (questions, word problems, and projects) that a child can complete in the classroom or at home. Such tasks provide opportunities to practice writing and present their thinking on a paper.

In the times to come, we will provide more resources to the teachers and learners in the form of videos, worksheets for practice, and links to online resources.

We hope that the book will be enjoyable to all and will lead to better teaching-learning conditions.

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Our National Anthem

*Jana-gana-mana adhinayaka, jaya he
Bharata-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchhala-jaladhi-taranga.
Tava shubha name jage,
Tava shubha asisa mage,
Gahe tava jaya gatha.
Jana-gana-mangala-dayaka jaya he
Bharata-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!*

Our National Anthem, composed originally in Bangla by Rabindranath Tagore, was adopted in its Hindi version by the Constituent Assembly as the national anthem of India on 24 January 1950.

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