

MATH-MAGIC

Book 3

Textbook in Mathematics for Class III



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

First Edition

February 2006 Phalgun 1927

Reprinted

November 2006 Agrahayana 1928

January 2008 Magha 1929

January 2009 Magha 1930

January 2010 Magha 1931

November 2010 Kartika 1932

January 2012 Magha 1933

December 2012 Agrahayana 1934

November 2013 Kartika 1935

November 2017 Agrahayana 1939

December 2018 Agrahayana 1940

PD 400T RPS

© National Council of Educational
Research and Training, 2006

₹ 60.00

Printed on 80 GSM paper with NCERT
watermark

Published at the Publication Division by the
Secretary, National Council of Educational
Research and Training Sri Aurobindo Marg,
New Delhi 110 016 and printed at J.K. Offset
Graphics Pvt. Ltd., B-278, Okhla Industrial
Area, Phase-I, New Delhi - 110 020

ISBN 81-7450-510-5

ALL RIGHTS RESERVED

- ❑ No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the publisher.
- ❑ This book is sold subject to the condition that it shall not, by way of trade, be lent, re-sold, hired out or otherwise disposed of without the publisher's consent, in any form of binding or cover other than that in which it is published.
- ❑ The correct price of this publication is the price printed on this page. Any revised price indicated by a rubber stamp or by a sticker or by any other means is incorrect and should be unacceptable.

**OFFICES OF THE PUBLICATION
DIVISION, NCERT**

NCERT Campus

Sri Aurobindo Marg

New Delhi 110 016

Phone : 011-26562708

108, 100 Feet Road

Hosdakere Halli Extension

Banashankari III Stage

Bangaluru 560 085

Phone : 080-26725740

Navjivan Trust Building

P.O. Navjivan

Ahmedabad 380 014

Phone : 079-27541446

CWC Campus

Opp. Dhankal Bus Stop

Panihati

Kolkata 700 114

Phone : 033-25530454

CWC Complex

Maligaon

Guwahati 781 021

Phone : 0361-2674869

Publication Team

Head, Publication Division : *M. Siraj Anwar*

Chief Editor : *Shveta Uppal*

Chief Business Manager : *Gautam Ganguly*

Chief Production Officer : *Arun Chitkara*

Editor : *Bijnan Sutar*

Production Assistant : *Mukesh Gaur*

Foreword

The National Curriculum Framework (NCF), 2005, recommends that children's life at school must be linked to their life outside the school. This principle marks a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home and community. The syllabi and textbooks developed on the basis of NCF signify an attempt to implement this basic idea. They also attempt to discourage rote learning and the maintenance of sharp boundaries between different subject areas. We hope these measures will take us significantly further in the direction of a child-centred system of education outlined in the National Policy on Education (1986).

The success of this effort depends on the steps that school principals and teachers will take to encourage children to reflect on their own learning and to pursue imaginative activities and questions. We must recognise that given space, time and freedom, children generate new knowledge by engaging with the information passed on to them by adults. Treating the prescribed textbook as the sole basis of examination is one of the key reasons why other resources and sites of learning are ignored. Inculcating creativity and initiative is possible if we perceive and treat children as participants in learning, not as receivers of a fixed body of knowledge.

These aims imply considerable change in school routines and mode of functioning. Flexibility in the daily time-table is as necessary as rigour in implementing the annual calendar so that the required number of teaching days are actually devoted to teaching. The methods used for teaching and evaluation will also determine how effective this textbook proves for making children's life at school a happy experience, rather than a source of stress or boredom. Syllabus designers have tried to address the problem of curricular burden by restructuring and reorienting knowledge at different stages with greater consideration for child psychology and the time available for teaching. The textbook attempts to enhance this endeavour by giving higher priority and space to opportunities for contemplation and wondering, discussion in small groups, and activities requiring hands-on experience.

National Council of Educational Research and Training (NCERT) appreciates the hard work done by the Textbook Development Committee responsible for this book. We wish to thank the Chairperson of the Advisory Committee, Professor Anita Rampal and the Chief Advisor for this book, Professor Amitabha Mukherjee for guiding the work of this committee. Several teachers contributed to the development of this textbook; we are grateful to their principals for making this possible. We are indebted to the institutions and organisations which have generously permitted us to draw upon their resources, material and personnel. We are especially grateful to the members of the National Monitoring Committee, appointed by the Department of Secondary and Higher Education, Ministry of Human Resource Development under the Chairpersonship of Professor Mrinal Miri and Professor G.P. Deshpande, for their valuable time and contribution. As an organisation committed to the systemic reform and continuous improvement in the quality of its products, NCERT welcomes comments and suggestions which will enable us to undertake further revision and refinement.

New Delhi
20 December 2005

Director
National Council of Educational
Research and Training



Textbook Development Committee

CHAIRPERSON, ADVISORY COMMITTEE FOR TEXTBOOKS AT THE PRIMARY LEVEL

Anita Rampal, *Professor*, Department of Education, Delhi University, Delhi

CHIEF ADVISOR

Amitabha Mukherjee, *Director*, Centre for Science Education and Communication (CSEC), Delhi University, Delhi

MEMBERS

Anita Rampal, *Professor*, Department of Education, Delhi University, Delhi

Asha Kala, *Lecturer*, DEE, Institute of Home Economics, New Delhi

Asmita Varma, *Primary Teacher*, Navyug School, Lodhi Road, New Delhi

Bhavna, *Lecturer*, DEE, Gargi College, New Delhi

Dharam Parkash, *Reader*, CIET, NCERT

Preeti Chaddha, *Primary Teacher*, Basic School, CIE, Delhi University, Delhi

Suneeta Mishra, *Primary Teacher*, Nagar Palika School, Bapudham, New Delhi

MEMBER-COORDINATOR

Surja Kumari, *Professor*, Department of Elementary Education, NCERT



Illustrations and Design Team

Srivi Kalyan, Chennai

Anita Varma, Delhi

Taposhi Ghoshal, New Delhi

Vandana Bist, New Delhi

Rajiv Gautam, *Street Survivors*,
Murshidabad, West Bengal

Raja Mohanty, *Industrial Design Centre*
IIT, Mumbai — Cover Design



Acknowledgements

National Council of Educational Research and Training (NCERT) thanks the following persons and institutions for their contribution towards this textbook. Special thanks are due to the Centre for Science Education and Communication (CSEC), Delhi University, for providing academic support and hosting all the textbook development workshops. The teams were fully supported by the staff and put in tremendous effort through long working hours even on holidays.

The Council acknowledges the advisory support of Rohit Dhankar, *Director*, Digantar, Jaipur and the contributions of K. Subramaniam, Homi Bhabha Centre for Science Education, Mumbai and Indu Dogra, *Primary Teacher*, M.C.D. Model School, Seva Nagar, New Delhi. This book has drawn upon ideas from existing materials, such as, *Numeracy Counts!* (National Literacy Resource Centre, Mussoorie), *Mathematics For All* (Homi Babha Centre for Science Education, Mumbai) and *Mathematics: A Textbook for Class III* (SCERT, Delhi).

The Council also gratefully acknowledges the contributions of Sandeep Mishra and Shashi Vij for their voluntary technical support and of Sadiq Saeed and Subodh Kumar, *DTP Operators* and Inderjeet Jairath, *Proof Reader* in shaping this book.





MATH-MAGIC

What is inside this book?

1. Where to Look From	1
2. Fun with Numbers	13
3. Give and Take	29
4. Long and Short	46
5. Shapes and Designs	60
6. Fun with Give and Take	76
7. Time Goes On.....	95
8. Who is Heavier?	113
9. How Many Times?	122
10. Play with Patterns	144
11. Jugs and Mugs	153
12. Can We Share?	160
13. Smart Charts!	177
14. Rupees and Paise	190