

# Math-Magic

Textbook in Mathematics for Class I



0119



एन सी ई आर टी  
NCERT

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

ISBN 81-7450-476-1

**First Edition**

February 2006 Phalguna 1927

**Reprinted**

September 2006 Asvina 1928

December 2007 Pausa 1929

January 2009 Magha 1930

November 2009 Agrahayana 1931

January 2011 Magha 1932

January 2012 Pausha 1933

December 2012 Agrahayana 1934

October 2013 Asvina 1935

November 2014 Agrahayana 1936

February 2017 Magha 1938

November 2017 Agrahayana 1939

December 2018 Agrahayana 1940

September 2019 Bhadrapada 1941

**PD 440T RPS**

© **National Council of Educational Research and Training, 2006**

₹ **65.00**

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 Nageen Prakashan Pvt. Ltd., Village Salarpur, Post Rajpura, Mawana Road, Meerut-250 001 (U.P.)

**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  
Bangalore 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 Production Officer : *Arun Chitkara*

Chief Business Manager : *Bibash Kumar Das*

Production Assistant : *Rajesh Pippal*

**Cover, Layout and Illustrations**

*Nidhi Wadhwa*



## 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.

The 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 for textbooks at the primary level, Professor Anita Rampal and the Chief Advisor for this book, Rohit Dhankar, *Director*, Digantar 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 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*, Central Institute of Education, Delhi University

## **CHIEF ADVISOR**

Rohit Dhankar, *Director*, Digantar, Jaipur

## **MEMBERS**

Asmita Verma, *PRT*, Navyug School, Lodhi Colony, New Delhi

Binoda Chandra Ojha, *PRT*, Fateh Public School, Sawai Madhopur, Rajasthan

Geeta Mahashabde, *Navnirmiti*, Near Pawai Municipal Hospital, Pawai, Mumbai

L.K. Bhopa, *Regional Institute of Education*, Bhubaneswar, Orissa

M. Sharda, *TGT*, Demonstration Multipurpose School, Regional Institute of Education, Mysore

N. Harini, *PRT*, Demonstration Multipurpose School, Regional Institute of Education, Mysore

## **MEMBER-COORDINATOR**

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



S. Amal Jerry Arputharaj, 10 years,  
St. Patrick Modern Higher Secondary School, Pondicherry



## Acknowledgements

The National Council of Educational Research and Training acknowledges the valuable contributions of the participants of the Review Workshop in the finalisation of this book — Maitrar Sasmal, *PRT*, Kendriya Vidyalaya, Sector IV, R.K. Puram, New Delhi; Subra Singh, *PRT*, Kendriya Vidyalaya, NCERT Branch, New Delhi; Rupinder Kaur, *PRT*, Guru Harkishan Public School, Vasant Vihar, New Delhi; Arun T. Mavalankar, Homi Babha Centre for Science Education, Mumbai.

Special thanks are due to Professor K.K. Vashishtha, *Head*, DEE, NCERT for his support during the development of this book.

The Council also gratefully acknowledges the contributions of Subodh and Sadiq Saeed, *DTP Operators*, and Bharati Guleria, *Copy Editor* during the preparation of the book and *Incharge*, Computer Station, Shakambar Dutt, in shaping this book. The efforts of the Publication Division, NCERT in bringing out this book, are also highly appreciated.

# THE CONSTITUTION OF INDIA

## PREAMBLE

**WE, THE PEOPLE OF INDIA**, having solemnly resolved to constitute India into a <sup>1</sup>**[SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC]** and to secure to all its citizens :

**JUSTICE**, social, economic and political;

**LIBERTY** of thought, expression, belief, faith and worship;

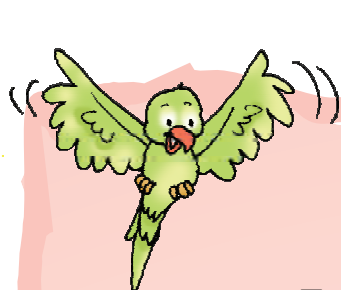
**EQUALITY** of status and of opportunity; and to promote among them all

**FRATERNITY** assuring the dignity of the individual and the <sup>2</sup>[unity and integrity of the Nation];

**IN OUR CONSTITUENT ASSEMBLY** this twenty-sixth day of November, 1949 do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

1. Subs. by the Constitution (Forty-second Amendment) Act, 1976, Sec.2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
2. Subs. by the Constitution (Forty-second Amendment) Act, 1976, Sec.2, for "Unity of the Nation" (w.e.f. 3.1.1977)





# Contents

Foreword

iii

1. Shapes and Space

1

2. Numbers from One to Nine

21

3. Addition

51

4. Subtraction

61

5. Numbers from Ten to Twenty

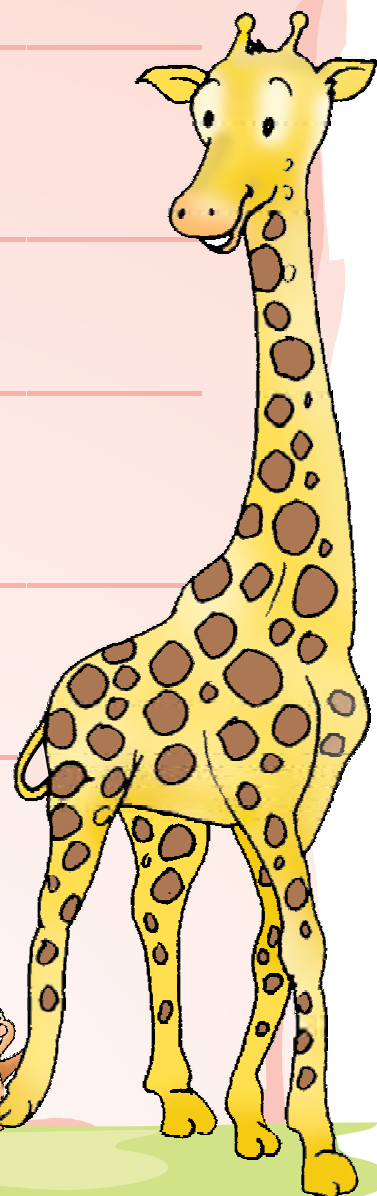
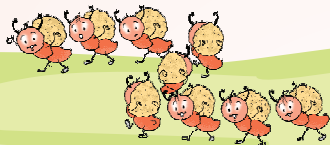
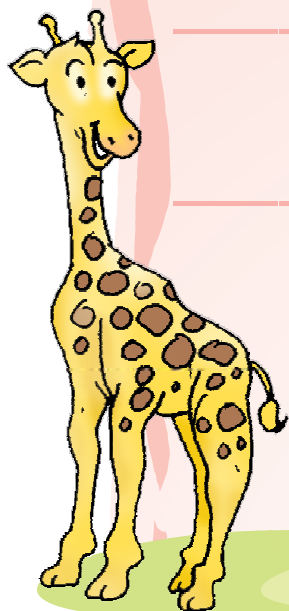
69

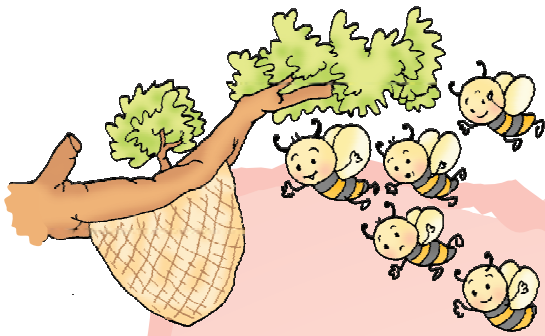
6. Time

89

7. Measurement

93





8. Numbers from Twenty-one to Fifty

104

9. Data Handling

109

10. Patterns

111

11. Numbers

117

12. Money

124

13. How Many

130

Teacher's Notes

134-146

The Shape Kit

147-150



(x)