

MATHEMATICS

CLASS - I

© Government of Andhra Pradesh, Hyderabad.

New Edition
First Published 2011

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 without the prior permission in writing of the publisher, nor be otherwise circulated in any form of binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

The copy right holder of this book is the Director of School Education, Hyderabad, Andhra Pradesh.

This Book has been printed on 70 G.S.M. White Paper Title
Page 140 G.S.M. White Cover Paper (MF)

Free Distribution by A.P. Government

Printed in India
at the Andhra Pradesh Govt. Text Book Press,
Mint Compound, Hyderabad,
Andhra Pradesh.



Published by
The Government of Andhra Pradesh, Hyderabad.

Respect the Law
Get the Rights

Grow by Education
Behave Humbly

Free Distribution by A.P. Government

Textbook Development, Publication Committee

- Chief Executive Officer :** **Smt. B. Seshu Kumari**
Director, SCERT, A.P., Hyderabad
- Chief Organizer :** **Sri. R. Jesupadam**
Director, Government Textbook Press, A.P. Hyderabad
- Organising Incharge :** **Dr. N. Upender Reddy**
Prof. Curriculum & Textbook Department
SCERT, A.P., Hyderabad

Writers

- Sri. J. Guravayya**, M.R.P., Puttoor Mandalam, Chittoor District.
- Sri. P. Ramesh**, Teacher, M.P.S. M.M. Puram, Vedurukuppam Mandalam, Chittoor District.
- Sri. T. Lakshman Kumar**, Teacher, M.P.S. Gonugiri, Kuppam Mandalam, Chittoor District.
- Sri. C.H. Keshava**, M.R.P. Meryalaguda Mandalam, Nalgonda District.
- Sri. K.V. Syamasundharacharyulu**, Teacher, M.P.S. Kottapalli, Vardhannapeta Mdl., Warangal District
- Sri. Y. Venkata Reddy**, Teacher & S.R.G. Member, ZPHS, Kudakuda, Nalgonda District.
- Sri. K. Rajender Reddy**, Teacher & S.R.G. Member, U.P.S. Thimmapur, Chandampeta Mandal, Nalgonda

Coordinators

- Sri. K. Bramhaiah**, Professor, S.C.E.R.T., A.P., Hyderabad
- Sri. K. Yadagiri**, Lecturer, Assistance organising incharge, S.C.E.R.T., A.P., Hyderabad

Editors

- Sri. K.K.V. Rayalu**, Lecturer, IASE, A.P., Hyderabad
- Dr. P. Ramesh**, Lecturer, IASE, Nellore.
- Dr. S. Sureshbabu**, AMO, Rajiv Vidya Mission, (SSA), A.P., Hyderabad
- Sri. B. Harisarvothama Rao**, Lecturer (Retd.), S.C.E.R.T., A.P., Hyderabad

Translator

- Sri. K. Venugopal Rao**, APES (Retd.), SCERT, Hyderabad

FOREWORD

Classes I and II are very important in school education. We consider them the foundation. The learning by children at higher classes depends on skills of Language and Mathematics they acquire at the primary stage. Children have some mathematical concepts before they come to school. The learning of mathematics must be built on the foundation of the concepts known to them.

Children use mathematics in their daily life situations. They estimate, calculate and compare quantities in an informal way and in meaningful situations. With a view to bidding farewell to rote learning and beginning to learn mathematics meaningfully, textbooks for classes I and II were prepared.

Units have been prepared in such a manner that pupils knowledge construction through investigation, understanding of mathematical concepts through observation, confirmation and generalisation in accordance with the basic principles laid down in National Curriculum Framework 2005 and Right to Education 2009. Meaningful 'Activities' and 'Exercises' were included such that children understand mathematical concepts and utilise their knowledge. Mathematical concepts were introduced in each unit of this book beginning with events in pupil's daily life situations, games they play and so on. Activities and exercises ensure that pupils acquire competencies like mathematical concepts, solving problems in a systematic way, thinking logically, expressing ideas in mathematical language etc. The book contains a large number of pictures besides different situations and activities to ensure proper understanding of concepts.

Learning mathematics is every child's right. Children can achieve mastery over numbers and the four mathematical operations by utilising these textbooks which have been prepared to create interest for mathematics and to ensure learning with enthusiasm. The requisite teaching- learning material should be prepared and ensure proper utilisation of children's learning time by organising teaching-learning processes. This is the first step towards preparing textbooks in the new system. We wish all the teachers will implement this and ensure that pupils achieve the mathematical competencies specified for classes I and II.

31-03-2011
Hyderabad

Smt. B.Seshukumari
Director,
SCERT, A.P. Hyderabad.

Free Distribution by A.P. Government

iv

NOTE TO TEACHERS

- Mathematics textbooks for classes I and II were prepared according to the basic principles suggested in NCF 2005 and the guidelines given under RTE 2009.
- Units were prepared in such a manner that pupils can learn mathematics with enthusiasm.
- Every unit includes the mathematical concepts known to pupils and pre mathematical concepts for the unit concerned besides appropriate exercises.
- The exercises have been prepared to ensure introduction of concepts through day-to-day / meaningful situations, to get pupils to solve problems that involve logical thinking, to express ideas in mathematical language and so on.
- Exercises and activities are so planned that by the end of class I, pupils will be able to understand the concepts of two digit number, acquire the ability to add and subtract numbers, by the end of class II, they will be able to add numbers with regrouping, subtract numbers using the technique of borrowing, acquire the basic concepts of multiplication and division and so on.
- At the beginning of any unit, the pupils must be helped to observe the pictures given. Questions must be asked to test their previous knowledge of mathematical concepts concerned. The concepts of the unit must be introduced accordingly. In this process, locally-available objects like pebbles, seeds, sticks, beads etc., must be made use of. It must be organised as a whole classroom activity.
- Then group activities must be organised to solve problems in a systematic manner, to think logically, to estimate things and other exercises. This book includes certain instructions / suggestions for the teacher. Those instructions must be followed to take up questioning the pupils, discussing things with them, getting them to observe pictures, counting and recording information etc.
- In the same way encourage pupils to understand the instructions given for problems before they can solve the problems by themselves.
- The textbooks have been prepared to help the pupils to take up exploration observation, research, confirmation etc., to understand mathematical concepts and apply the knowledge for solving problems.
- For this a number of pictures depicting pupil's real life situations have been included.
- Children use mathematics extensively in many day-to-day situations. Consequently they acquire ability of application. As these textbooks have been prepared with this background, they are to be utilised completely and ensure utilisation of children's learning time.

Free Distribution by A.P.Government

- They can add different numbers to get the same total.
- They understand that zero added to any number gives the same number.

Unit – 8: Subtraction of Numbers Less than 9

- Pupils can say how many things must be taken from 9 and also say how many remain.
- They can say that if 0 things are subtracted from a number upto 9 there will be no change and that the same number of things remain.
- They can compare groups and say less or more and by how much through subtraction.
- They can say zero things are there when all subtracted from given things.
- They can write numbers horizontally or vertically and subtract them.
- They can identify different subtractions with same result and also say them.

Unit – 9: Numbers from 10 to 20

- Pupils can say tens and ones for those more than 10.
- Pupils can count and write number upto 20 in order.
- They can say which is bigger and which is smaller among any numbers upto 20 are given.
- They can say the smallest and the biggest number among the given numbers.

Unit – 10: Addition of numbers sum exceeding 20

- Using bundle, loose sticks pupil able to do addition of two numbers sum not exceeding 20.
- pupil able to do row and column addition of numbers.

Unit – 11: Subtraction of numbers not exceeding 20

- Pupil able to subtract single digit number from two digit number by using bundles and loose sticks.
- Pupil able to do column and row subtractions.

Unit – 12: Introduction of tens from 10 to 100

- Pupil count stick bundles in tens from 10 to 100 and able understand and write them (10, 20, 30, etc).

Syllabus – Expected Outcomes

Unit – 1: Pre Mathematical concepts

- Pupils can observe things and speak about them.
- They can use pre mathematical terms in their speech.
- They can use terms like inside - outside, above - below, fat - thin, big - small, more - less, deep - shallow and express them in their own words, giving examples and identify differences.

Unit – 2: Shapes

- Pupils can compare two dimensional and three dimensional shapes (It is not compulsory to express with Mathematical terminals)

Unit – 3 and 4: Numbers from 1 to 5; numbers from 6 to 9

- Pupils can count things in two groups and compare.
- Pupils can separate similar things from group and count them.
- They can count things upto 9 and show them with number and also write them in order.
- They can identify things of equal number.
- They can arrange the things in a sequence according to their number.

Unit – 5: Before - After - Between - More - Less

- Pupils can say the first, last, middle, previous, next things which are in order within 9 as per their place.
- They can compare things(upto 9) in two groups as more, less and equal.
- They can arrange numbers and things upto 9 in ascending and descending orders.

Unit – 6: Zero (0)

- Pupils can show zero when there are not any thing.
- They can say zero before 1.

Unit – 7: Addition of Numbers, the Total not Exceeding 9

- Pupils can say that if 1 is added to a number, we get the next number.
- They can count each bead in a chain and add them.
- They can write two numbers (upto 9) horizontally or vertically and add them.
- They can say how much is to be added to a number to get desired number.
- They can add things in two different groups and their total.

Unit -13 and 14: Numbers from 10 to 100. Number that comes: Before-Between-After

- Pupils can show given numbers as tens and ones using currency notes or bundles of sticks and loose sticks.
- Pupils can say how many tens and how many ones are their in bundle of sticks and loose sticks or ten rupee and one rupee coins.
- They can say/ write smaller, bigger or the middle numbers among those below 100.
- They can write numbers from smaller to bigger and bigger to smaller in order.

Unit – 15: Money

- Pupils can identify different coins (50 p, Re.1, Rs.2, Rs. 5)
- They can say two 50-paise coins make one rupee
- They can identify notes of denominations 1, 2, 5, 10, 20, 50 and 100.

Unit – 16: Time

- Pupils can identify different times of a complete day (morning, afternoon, daytime, evening, night). They can say what people at those times.
- They learn what they must do at what time

Unit – 17: Length – Weight – Size

- Pupils can measure things using nonstandard units like foot, cubit etc
- They can say which is heavier or lighter, which contains more liquid
- They can estimate length, weight and size without actual measurement
- They can say which is more / size

CONTENTS

Unit	Title	Month	Page No
1.	Pre-Mathematical Concepts	June	1
2.	Shapes	June	6
3.	Numbers from 1 to 5	July	13
4.	Numbers from 1 to 9	July	29
5.	Before-After-Between-More-Less	July	44
6.	Zero (0)	August	53
7.	Addition of Numbers, the Total not Exceeding 9	August	56
8.	Subtraction of Numbers up to 9	September	65
9.	Numbers from 10 to 20	September	72
10.	Addition of Numbers, the Total not Exceeding 20	November	85
11.	Subtraction of Numbers Less than 20	November	89
12.	Introduction of Tens from 10 to 100	December	93
13.	Numbers from 20 to 100	December	97
14.	Number that come Before, Between and After	December	116
15.	Money	January	122
16.	Time	January	127
17.	Length - Weight - Size	February	131
	Revision	March	

OUR NATIONAL ANTHEM

- Rabindranath Tagore

Jana-gana-mana-adhinayaka, jaya he

Bharata-bhagya-vidhata.

Punjab-Sindh-Gujarat-Maratha

Dravida-Utkala-Banga

Vindhya-Himachala-Yamuna-Ganga

Uchchala-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!

PLEDGE

"India is my country. All Indians are my brothers and sisters.
I love my country, and I am proud of its rich and varied heritage.

I shall always strive to be worthy of it.

I shall give my parents, teachers and all elders respect,
and treat everyone with courtesy. I shall be kind to animals

To my country and my people, I pledge my devotion.

In their well-being and prosperity alone lies my happiness."