

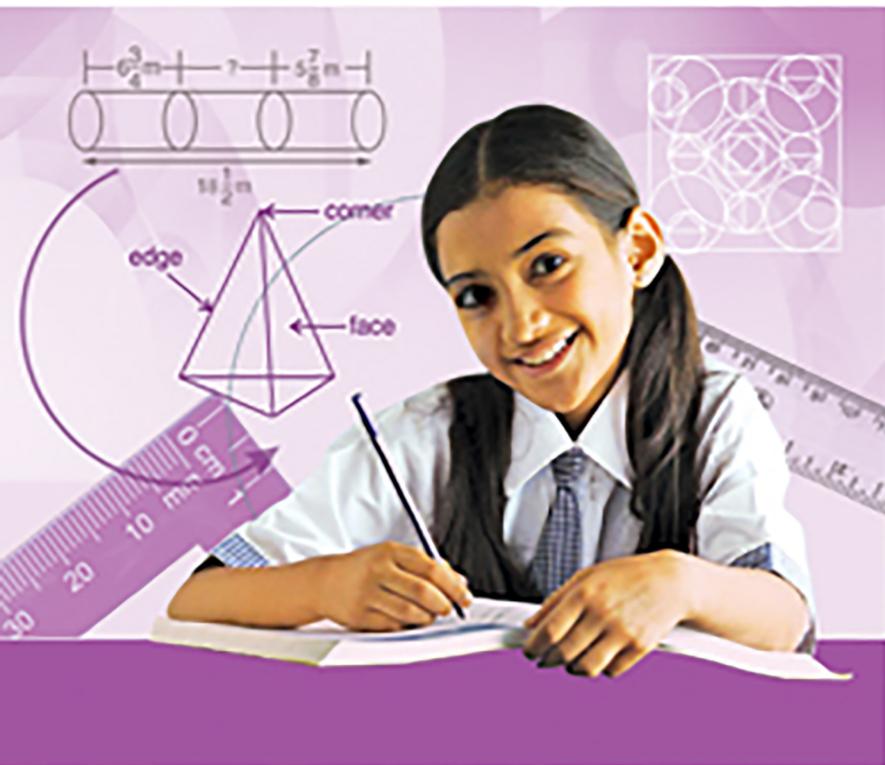
As per CBSE Guidelines and CCE Pattern

New  
Revised  
Edition

Composite

# Mathematics

for Class **VI**



## INCLUDING

- Mental Maths
- Multiple Choice Questions
- HOTS
- Activities and Worksheets
- Chapter Assessments
- Formative/Summative Assessments
- Lab Activities

S.K. GUPTA  
ANUBHUTI GANGAL



Strictly conforming to the NCERT Syllabus and guidelines laid down by CBSE  
and Other Educational Boards

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# Composite Mathematics

FOR CLASS VI

**Revised Edition 2015**

*Teacher's Handbook also Available*

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Birla Vidya Mandir  
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## PREFACE TO THE REVISED EDITION

- The new model of teaching methodologies, content and *Continuous and Comprehensive Evaluation (CCE)* introduced by CBSE has been religiously followed and adhered to in the revised edition.
- Exercises have been re-designed to include all types of questions, especially the *Multiple Choice Questions (MCQs)* and *High Order Thinking Skills (HOTS)*.
- *Chapter Assessment* based on CCE Pattern is provided at the end of each chapter to assess the child's understanding of the concepts given therein.
- *Lab Activities as per CBSE guidelines* have been incorporated at the end of the book.
- *Formative Assessment* is a part of the on-going scholastic evaluation of the child (as per CCE). It is a kind of Unit Test – A *Self-assessment* of the concepts taught in the class.
- *Mental Maths* exercises have been given to develop skills in rapid calculations.
- It also incorporates *Maths Alert* to warn against likely mistakes and misconceptions.
- *Summative Assessment* at the end of each term has been skillfully prepared incorporating all types of questions such as :
  - (i) Very Short Answer Type Questions (Concept Review, True-False, Matching Questions).
  - (ii) Short Answer Type Questions.
  - (iii) Multiple Choice Questions (MCQs).
  - (iv) High Order Thinking Skills (HOTS).

AUTHORS

### A NOTE ON THE NEW REVISED EDITION

The present edition is a thoroughly revised version of the last edition. The content has been thoroughly revised, reorganised and re-written at a number of places making the treatment simpler and easier to understand. In deference to feedback and suggestions received from learned faculty in schools, a sincere effort has been made to **prune the exercises** and reduce the number of problems without of course compromising the quality which remains the hallmark of this series.

AUTHORS

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# PREFACE

It gives us great satisfaction to be able to bring out this series in **Composite Mathematics for Classes VI to VIII**. It has been designed to incorporate the current global trends and International practices and the latest philosophy and policy of providing stress-free education.

The **salient features** of this series are :

- 1. It follows strictly the latest syllabus presented and released by the NCERT and its guidelines.**
- All the mathematical concepts have been presented in a very simple and lucid form and loading the course content with unnecessary and irrelevant details has been avoided. The approach and orientation is to lay a strong foundation for the students through adequate emphasis on the fundamentals.
- It aims at **complete involvement of the pupils in the learning process**. The emphasis throughout the text is on a student-centred performance, and in keeping with the spirit of the new Curriculum, **activity approach** is freely used relating the mathematical concepts to real-life situations.
- Every unit is introduced by a motivating paragraph or story.
- To facilitate easy and better understanding, each unit is divided into a number of subunits with short and separate practice exercises on each subunit.
- An attempt has been made to expose the children more fully to the 'Why' of various operations and made abundant use of diagrams, illustrations, cartoons, tables and charts to stimulate the student's interest in the subject and to clarify more difficult concepts.**
- Colour panels are used throughout as a teaching aid to emphasize important terms and relationships and present useful tips.
- The problems given in the books avoid tedious calculations and help in strengthening the understanding of basic principles honing the faculties of thinking and reasoning.
- Each chapter contains a **unit summary of key points** at the end. It reviews the main points covered and helps the students in remembering them.
- Mental maths** exercises have been given to help the students acquire speed and sharpen their intellect.

It is hoped that this series of books will meet more than adequately the needs of the students they are meant for. Any suggestions for the improvement of the books would be most welcome and gratefully acknowledged.

**AUTHORS**



## A NOTE FOR THE TEACHERS

Dear friends,

We feel happy to be able to present for your perusal and consideration the new and thoroughly revised and updated edition of our **Composite Mathematics Series for Classes VI, VII and VIII**. It has no doubt been possible as a result of the motivation and feedback received in the form of valuable comments, suggestions and criticism from the learned teachers. We strongly feel that a textbook howsoever good it may be is only a tool to help teachers to teach effectively. It is the teacher and only the teacher who is competent to decide his/her teaching strategies in the classroom and is the best judge of how to use the textbook to meet the special needs of his/her class. It is earnestly hoped that this series will be able to supplement your efforts effectively to create interest of your pupils in the subject and make the study of mathematics interesting and enjoyable and gain mastery over the subject.

Howsoever best one performs or creates there is always scope for improvement.

We would be very happy rather grateful to receive your comments, appreciation/criticism and suggestions for further improvement of the books.

With regards

Yours sincerely  
**Authors**

## A NOTE FOR THE STUDENTS

Dear students,

Wishing you the best in life. You are the best judge to evaluate whether the book you are studying fulfils your needs and satisfies your thirst for knowledge or not. Please do not hesitate to write individually through the publishers or directly to the authors at the following address, if you come across any discrepancies or if you have some suggestions to make.

Email: [anubhutigangal@hotmail.com](mailto:anubhutigangal@hotmail.com)

**Authors**



# NEW SYLLABUS

## NUMBER SYSTEM

### (i) Knowing Our Numbers

Consolidating the *sense* of numberness upto 5 digits, size, estimation of numbers, identifying smaller, larger, etc. Place value (recapitulation and extension), connectives; use of symbols =, <, > and use of brackets, word problems on number operations involving large numbers upto a maximum of 5 digits in the answer after all operations. This would include conversions of units of length and mass (from the larger to the smaller units), estimation of outcome of number operations. Introduction to a sense of the largeness of, and initial familiarity with, large numbers upto 8 digits and approximation of large numbers.

### (ii) Playing With Numbers

Simplification of brackets, multiples and factors, divisibility rule of 2, 3, 4, 5, 6, 8, 9, 10, 11. (All these through observing patterns. Children would be helped in deducing some and then asked to derive some that are a combination of the basic patterns of divisibility.) Even/odd and prime/composite numbers, co-prime numbers, prime factorization, every number can be written as products of prime factors. HCF and LCM, prime factorisation and division method of HCF and LCM, the property  $LCM \times HCF = \text{product of two numbers}$ . All this is to be embedded in contexts that bring out the significance and provide motivation to the child for learning these ideas.

### (iii) Whole Numbers

Natural numbers, whole numbers, properties of numbers (commutative, associative, distributive, additive identity, multiplicative identity), number line. Seeing patterns, identifying and formulating rules to be done by children. (*As familiarity with algebra grows, the child can express the generic pattern*).

### (iv) Negative Numbers and Integers

How negative numbers arise, models of negative numbers, connection to daily life, ordering of negative numbers, representation of negative numbers and number line. *Children to see* patterns, identify and formulate rules. What are integers, identification of integers on the number line, operation of addition and subtraction of integers, showing the operations on the number line (addition of negative integer reduces the value of the number) comparison of integers, ordering to integers.

### (v) Fractions

Revision of what a fraction *is*, fraction as a part of whole, representation of fractions (pictorially and on number line), fraction as a division, proper, improper and mixed fractions, equivalent fractions, comparison of fractions, addition and subtraction of fractions (Avoid large and complicated unnecessary tasks). (Moving towards abstraction in fractions).

Review of the idea of a decimal *fraction*, place value in the context of decimal *fraction*, inter conversion of fractions and decimal fractions (avoid recurring decimals at this stage), word problems involving addition and subtraction of decimals (two operations together on money, mass, length and temperature).

## ALGEBRA

### Introduction of Algebra

- Introduction to variable through patterns and through appropriate word problems and generalization (example  $5 \times 1 = 5$ , etc.)
- Generate such patterns with more examples.
- Introduction to unknowns through examples with simple contexts (single operations).

## RATIO AND PROPORTION

- Concepts of ratio
- Proportion as equality of two ratios
- Unitary method (with only direct variation implied)
- Word problems

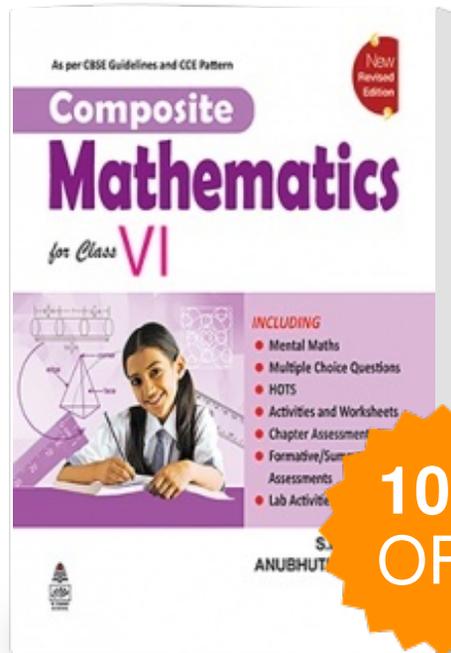
## GEOMETRY

### (i) Basic Geometrical Ideas (2-D)

Introduction to geometry. Its linkage with and reflection in everyday experience.

- Line, line segment, ray.

# Composite Mathematics Book-6



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