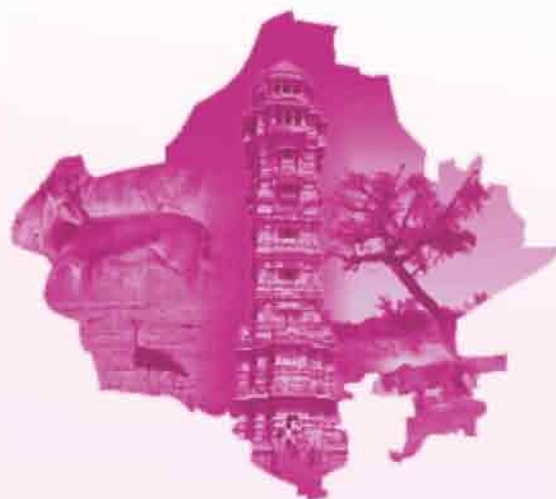


Mathematics

Class VII



Rajasthan State Institute of Educational Research and Training, Udaipur



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Foreword

The Changes in scenario of the Society and the nation entail the changes in the system of education which determines and accelerate the process of development in them. Education, beside other factors, is an important factor, responsible for the development of the society and the nation. To make School education, effective, useful and interesting, the changes in the curriculum from time to time is an essential step. The national curriculum framework 2005 and right to Free and Compulsory Child Education Act, 2009 in the present time make it evident that a child occupies a pivotal place in all the teaching-learning activities, conducted in any educational institution. Keeping this view in mind, our process of causing learning amongst the students should be such that they construct knowledge on their own on the basis of the knowledge acquired through their experiences. A child should be allowed maximum freedom in the process of learning and for that – teacher should act as a guide and helper rather than a preacher to make the curriculum easily accessible to children/students, a text book is an important means. That is why the government of Rajasthan has got the new text book written by making necessary changes in them in the light of the changes made in the curriculum.

While writing a text book it has been kept in view that the text book should be easy and comprehensible, with the help of simple language and interesting and attractive with the inclusion of pictures and varied activities through which the learners may not only imbibe the knowledge and information, contained in them but also associate themselves with the social, neighbourhood and local environment along with the development of and adherence to the knowledge about the historical, cultural glory and democratic values of the country so as to establish themselves as sincere, good and worthy citizens of our country, India.

I very humbly request the teachers that they should not only confine themselves to the completion of the teaching of the text book but also to present it in such a manner that a child gets ample opportunities of learning and accomplishing the objectives of teaching-learning on the basis of the curriculum and his/her experiences.

The state Institute of Educational Research and Training (SIERT), Udaipur acknowledges its thankfulness to all those government and private institutions viz. National Council of Educational Research and Training, New Delhi, State and National Census Departments, Ahad Museum, Udaipur. Directorate of Public Relations, Jaipur, Rajasthan, Rajasthan Text Book Board, Jaipur, Vidya Bharati, All India Educational Institute, Jaipur, Vidya Bhawan Reference Library, Udaipur, different writers, newspapers and magazines, publishers and websites that have

cooperated with us in choosing and making the required material available for writing and developing the text book.

Inspite of best efforts, if the name of any writer, publisher, institution, organization and website has not been included here, we apologize for that and extend our thankfulness to them. In this connection, their names will be incorporated in the next editions of this book in future. It (SIERT) also extends thanks to Mr. Damodar Lal Kabra, Retd. Principal, Chittorgarh for cooperation with us in the translation work of this book.

To enhance the quality of the text books, we have received timely guidance and precious suggestions from Shri Kunji Lal Meena Secretary, Elementary Education, Govt. of Rajasthan, Shri Naresh Pal Gangwar Secretary, Secondary Education Govt. of Rajasthan, and Commissioner National Secondary Education Council, Shri Suwa Lal Meena, Director Secondary Education, Govt. of Rajasthan, Shri Babulal Meena, Director Elementary Education, Govt. of Rajasthan and Shri B.L. Jatawat, Commissioner Elementary Education, Govt. of Rajasthan Jaipur, and as such the institute (SIERT) expresses its heartiest gratefulness to all of them.

This book has been prepared with the financial and the technical support of UNICEF. In this connection we are grateful to Mr. Samuel M, Chief, UNICEF Jaipur, Sulgana Roy, Education Specialist and all the related officers of UNICEF for their timely support and cooperation. Besides them the institute appreciates the efforts of all those officers and other members of the staff who have directly or indirectly cooperated with us in accomplishing the task of book writing and publishing it.

I am highly delighted to submit this book to you all with this belief in mind that it will not only prove beneficial to the teachers and the students but also serve as an effective link in the teaching-learning process and the personality development of the students.

To value thoughts and suggestions is a specific feature of a democracy; therefore the SIERT, Udaipur will always welcome your precious thoughts and suggestions for improving the quality of this book and thus make it better in every respect.

Director
SIERT, Udaipur



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For the Teachers

The new curriculum and the text book(s) in Mathematics have been prepared with a view to developing the teachers' competencies in the teaching process and methodology in this subject (Mathematics) in the light of the present changing global scenario.

This curriculum and text book in Mathematics have been prepared with a view to developing the child's understanding regarding the world of education along with the development of his/her latent capacities, enhancement of humane and moral values in dedicated, sincere citizen as well a patriot.

It is expected of a teacher of Mathematics to imbibe the main guiding principles of teaching. Stated in N.C.F., 2005 and in the light of them make the learners not only understand the subject matter of the book but also to imbibe it for their benefit in future.

The text book contains the following main features in it viz. the students have been made aware of the subject matter of the lessons the help of examples from their neighbourhood. In doing so it has been kept in mind that the teaching-learning material is available to the learners at low cost in their surroundings so that the teachers may use it in their day-today teaching by conducting different activities in the class room with a view to ensuring the learners maximum participation in the teaching-learning process and thereby making his/her teaching effective, useful and purposeful.

Considering the child as the center of the teaching-learning process, the teachers of learning by doing and correcting their mistakes on their own so as to develop insight in them for grasping and imbibing the subject matter of the mathematical lessons properly.

In the light of the provision of the Act of the Right to free and Compulsory Education, 2009, the subject matter has been prepared according to the spirit of the 'Continuous and Comprehensive Evaluation'. Therefore students should be imparted instructions dividing them into groups, according to their standards for inculcating the mathematical competencies in them.

The concepts of Mathematics have been delineated in detail along with pertinent pictures and diagrams for them. Examples and exercise have been combined so that the learners may understand the concepts and thus there by develop the capacity to solve the mathematical problems with maximum participation.

Under the heading 'Learning by Doing' enough activities for the development of the skills of mathematical thinking. Researching of the mathematical facts drawing, lining and measuring have been given for practice. All these activities are to be accomplished by the students with the spirit of cooperation, tolerance and responsibility.

The topics of national concerns viz - Environmental protection. Road safety, Gender Sensitivity, Beti Bachao; Bati Padhao and uprooting of Social evils, etc – have been included at proper places in the text book which the teachers should pay heed to and the same should be conveyed to the learners through the mathematical problems and mathematical solution and other glossary. The learners should be brought home to these national concerns along with the development of the sense of understanding them.

The teacher should judiciously divide the class into groups and sub-groups in order to generate the skill of self learning amongst the learners through various activities given in the text book of Mathematics. At the end of every lesson in the text book the mathematical concepts, definitions and results have been given under the title 'We have Learnt' according to learners capacities and maturity of minds.

At proper places the life history of Indian mathematicians and their contribution to Mathematics have been given in order to make the learners understand and appreciate such great personalities.

The curriculum and the book of Mathematics have been prepared, keeping the child at the center of the teaching-learning process reposing great faith in the teacher who with their great devotion and sincere efforts will work with children to make them understand the mathematical problems, definition, concepts and solutions well with this very belief in mind. The group of writers presents this book of Mathematics to the teachers of Rajasthan.

In India Mathematics has had rich tradition(s). Since times immemorial Indian Scholars and mathematicians have done excellent work in this area. In order to use the old knowledge in modern Mathematics and to establish its harmony with a view to enriching it (modern Mathematics), the Indian numerical system (Devnagari) and Vedic Mathematics have been incorporated in this text book - Efforts have been made to make calculations easier through Vedic Mathematics.

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