

Science

Textbook for Class VI



Rajasthan State Institute of Educational Research and Training, Udaipur



Publisher
Rajasthan State Textbook Board, Jaipur

Edition : 2016

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Price :

**Printing Paper : RSTB watermark
80 GSM Paper**

**Publisher : Rajasthan State Text Book Board
2-2A, Jhalana Doongri, Jaipur**

Quantity :

Printer :

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Foreword

The Changes in scenario of the Society and the nation entail the changes in the system of education which determine 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 the Free and Compulsory Child Education Right 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 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, neighborhood and local environment along with the development of and adherence to the knowledge about historical, cultural glory and constitutional 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.

In spite 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.

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For the Teachers

National Curriculum Frame Work, 2005 has thrown new light on the construction of knowledge according to which analysing of one's own experiences, developing of one's own understanding about something/somebody and explaining the meaning of something is called knowledge. Reaching knowledge means to establish one's own dialogue with other explanations and standard knowledge and information.

The great educationist and thinker Gijubhai has said, “Learning is an art and methods / techniques of learning are its tools. Those teachers who have good and proper knowledge of using these tools become expert in the art of teaching-learning, though their speed in this process may be a bit slow. But those teachers who have not had any preparation for using this art remain far away from the art of teaching-learning.

Just as a text book helps explain things to students and establish coordination between other explanations. Similarly a teacher's job is not confined only to serve as a resource of doling out knowledge but to understand the process of knowledge construction in the children, boost it and give it a concrete shape. The N.C.F. 2005 and the principles of guidelines to the Right to Education Act, 2009 have been the main-stay of the process involved in writing this text book (of science). While writing this text book, the important points, facts and subject matter contained in N.C.F., 2005, new Delhi and the curriculum and the text books of other states have been included in it with reference to Rajasthan after careful study of them (the books, curriculum of other states).

The main and important topics and their subject contents have been written in the form of dialogues, based on the experiments (practical work) and activity method. The subject matter of science has been written and presented through varied activities viz observing, inquiring, classifying, analysing, synthesizing, discriminating, concluding and propounding, etc. which have been incorporated through different steps at proper places in the lessons so that the students may construct knowledge by accomplishing these tasks on their own. The teachers are therefore requested to provide the learners ample chances to complete those tasks during the teaching learning process. And for that they (teachers) should encourage them (learners). The teachers

should play the role of guides and help the learners form concepts about the subject. Efforts have been made to incorporate the facts and figures and points related to Rajasthan, India and the world in the subject matter of the lessons in the text book so that the learners may get acquainted with their local, neighbourhood environment, culture and values along with those of their country and the world

By means of this book efforts have been to foster among the learners the feelings of tolerance, equality, consciousness towards the protection of environment, care for good health and healthy nutrition and the inculcation of scientific altitude along with the development of sensitivity towards cleanliness, sanitation and healthy habits. It is expected of the teachers that they will instil and develop the above stated feelings and emotions and values in the learners so that they may become the cultured, capable, suitable and disciplined citizens who may take part actively in the development of the society , the state and the nation. All this entails on the teachers to have not only full subject knowledge but also to have the sense of responsibility and dedication towards their profession. It is only then the will be able to prove himself as a model teacher for the students.

Again it is expected of the teachers that they will teach the subject matter, in the newly written books, in the light of the above stated objectives with zeal, fervor and dedication, using the above mentioned techniques so that the learners may be grounded in quality and value oriented education and thereby they may grow as responsible, dutiful and hardworking students of the country.



Contents

S.No.	Name of the Lesson	Page No.
I	Food	
1.	Sources of Food	1
2.	Nutrition in Plants	11
II	Matter and things	
3.	Nature of things	19
4.	Natural Fibres	27
5.	Let us know the substance	37
III	The World of living beings	
6.	Living and non-living things	47
7.	Cell	54
8.	Micro-organisms	62
9.	Types and parts of plants	71
IV	Things in motion People and their ideas	
10.	Motion	85
11.	Simple Machine	93
V	How do Things work?	
12.	Force	103
13.	Magnetism	112
14.	Electric Circuit	118
15.	Science in Daily Life	124
VI	Natural Events	
16.	Light and Shadow	131
VII	Natural Resources	
17.	Air, Water and Soil	139
	Annexure – Road Safety	148