

Health and Physical Education

Textbook for Class X



विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

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

ISBN 978-93-5292-335-9

First Edition

August 2020 Shravana 1942

PD 10T SU

© **National Council of
Educational Research and
Training, 2020**

₹ 160.00

Printed on 80 GSM paper

Published at the Publication Division by the Secretary, National Council of Educational Research and Training, Sri Aurobindo Marg, New Delhi 110016 and printed at Modest Print Pack Pvt. Ltd., 234, Sector-68, I.M.T., Faridabad - 121 004

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
Bengaluru 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 : *Anup Kumar Rajput*

Chief Editor : *Shveta Uppal*

Chief Production Officer : *Arun Chitkara*

Chief Business Manager (Incharge) : *Vipin Dewan*

Production Officer : *Atul Saxena*

Cover and Layout
DTP Cell, PD

FOREWORD

Health of children is a major concern worldwide. Their health is very important as they constitute a large percentage of our population. Many factors like physical, psychological, socio-economic and cultural influence our health, both in our day-to-day life and in the long run. The involvement of all children in physical activities, games and sport, and yoga along with authentic knowledge is essential for their physical, emotional, social and mental development. In this endeavour, school education plays an important role. All the National Curriculum Frameworks have recommended health and physical education as an integral part of the school curriculum. With this view, the National Council of Educational Research and Training (NCERT) has prepared this textbook on Health and Physical Education for Class X.

This textbook focuses on the holistic understanding of physical education and its relationship with other subjects and the effects of physical activities on human body. It also provides a scope for children to learn the theoretical, as well as, the practical aspects of individual and team games. Further, it discusses yoga, dietary considerations, safety measures for healthy living, social health, agencies and awards promoting health, sports and yoga. The information about coronavirus (COVID-19), its modes of transmission and prevention have also been included at relevant places to help the children remain safe and healthy. Keeping in view the inter-related nature of the concepts covered in the area of Health and Physical Education, the presentation is made in a cohesive and an integrated manner rather than adopting a fragmentary approach. Experiential learning activities for acquiring skills for healthy living are made an integral part of the book.

The NCERT appreciates the efforts of the Textbook Development Committee. Several experts and teachers have contributed towards the finalisation of this book. We are grateful to them and their institutions. I am thankful to Professor Saroj Yadav, *Dean (Academic)* and the *Project Coordinator* of the National Population Education Project (NPEP) for her continuous efforts in developing this material and bringing it to its present form.

As an organisation committed to systemic reform and continuous improvement in the quality of our products, the NCERT welcomes comments and suggestions from teachers and students, which will enable us to undertake further revision and refinement.

Hrushikesh Senapaty
Director

New Delhi
May, 2020

National Council of Educational
Research and Training

© NCERT
not to be republished

TEXTBOOK DEVELOPMENT COMMITTEE

MEMBERS

- Anjana Agarwal, *SEO*, Food and Nutrition, NIOS, Sector 62, Noida
- Bharti Sarkar, *Retired Associate Professor*, Maitreyi College, University of Delhi
- Bhuvan Chandra Kapri, *Professor*, Department of Physical Education, Banaras Hindu University, Banaras, Uttar Pradesh
- Ishwar V. Basavaraddy, *Director*, Morarji Desai National Institute of Yoga, Ministry of Ayush, Government of India, New Delhi
- Poonam Aggarwal, *Professor*, Department of Gender Studies, NCERT, New Delhi
- Priyanka, *Assistant Professor*, M. B. (P.G.) College, Dadri, Gautam Buddh Nagar, Greater Noida, Uttar Pradesh
- Ratnesh Singh, *Associate Professor*, Department of Physical Education, Guru Ghasidas Central University, Koni, Bilaspur, Chhattisgarh
- Sagarika Bandyopadhyay, *Dean and Head*, Department of Physical Education, Viswabharati University, Shantiniketan, West Bengal
- Shorya Kumar Yadav, *Professor*, Department of Physical Education, Devi Ahilyabai University, Indore, Madhya Pradesh
- Sima Saigal, *Assistant Professor*, North East Regional Institute of Education (NERIE) NCERT, Shillong

MEMBER COORDINATOR

- Saroj Yadav, *Professor and Dean (Academic)*, Project Coordinator of National Population Education Project (NPEP), Adolescence Education Programme (AEP), NCERT, New Delhi.

REVIEW COMMITTEE

- Anil Ramachandran, *Associate Professor*, School of Physical Education and Sports Sciences, Kannur University, Kerala
- Avinash Sidhu, *Retired Professor*, A-13 Ratan Nagar, Jabalpur
- Harish Kumar Meena, *Assistant Professor*, Department of Education in Social Sciences (DESS), NCERT, New Delhi

- Manjit Singh, *Deputy Secretary*, Physical Education and Sports, CBSE, New Delhi
- Pushkar Vohra, *Joint Secretary* (Academics), CBSE, Delhi
- Vijay Chahal, *Professor*, Department of Physical Education, Deen Dayal Upadhyay, Gorakhpur University, Gorakhpur
- Vikas Prajapati, *Assistant Director*, Department of Physical Education, The Maharaja Sayajirao, University of Baroda, Near Rosary School, Fatehgunj, Vadodara

© NCERT
not to be republished

ACKNOWLEDGEMENTS

The National Council of Educational Research and Training (NCERT) acknowledges the valuable contribution of the following individuals and organisations for reviewing and refining the manuscript of this book.

Amit Sharma, *TGT Physical Education*, Kendriya Vidyalaya No.-1, Delhi Cantt.; Asha Arora, *Science Teacher*, CIE, Department of Education, University of Delhi; Bhagwati Yadav, *Yoga Teacher*, KV NSG, Manesar, Gurugram, Haryana; Guru Dutt Ghai, *Professor*, Department of Health and Physical Education, Laxmibai Institute of Physical Education, Gwalior, Madhya Pradesh; Indu Sharma, *Assistant Professor*, Yoga, Morarji Desai National Institute of Yoga, New Delhi; Namrata Khanna, *Consultant*, Food Safety and Standards Authority of India (FSSAI), FDA Bhawan, New Delhi; Neetu Sharma, *Yoga Therapist*, Morarji Desai National Institute of Yoga, New Delhi; N.K. Dutta, *Associate Professor and Head*, Physical Education, Ichchhanath Surat, Gujarat; Preeti Shukla, *TGT Physical Education*, Kendriya Vidyalaya, Tagore Garden, New Delhi; Priti Verma, *TGT*, Physical Education, Kendriya Vidyalaya, Shivgarh, Raibareli, Uttar Pradesh; Rajveer Singh, *Teacher*, Physical Education, Jawahar Navodaya Vidyalaya, Baghra, Muzaffarnagar Uttar Pradesh; Sadhana Arya, *Former Guest Faculty*, Morarji Desai National Institute of Yoga, New Delhi; Samiran Chakrabarty, *Associate Professor*, IGIPSS, University of Delhi, B-Block, Vikas Puri, New Delhi; Shivani Bansal Moghe, *Consultant*, Food Safety and Standards Authority of India (FSSAI), New Delhi; Vikram Singh, *Professor*, Department of Physical Education & Sports, JNU, New Delhi; Abhimanyu Singh, *Professor and Head*, Department of Physical Education, Banaras Hindu University, Varanasi; Archana Chahal, *Professor*, Physical Education University of Allahabad, Prayagraj; Ashwani Bhati, D.M. School, R.I.E. Ajmer; Atul Dubey, *Faculty* of Physical Education, I.T.O., Ajmer Azad Khan, *Head*, Sportz Village Pvt. Ltd, Bangalore; Bijaya Kumar Malik, *Assistant Professor*, NCERT, New Delhi; Deepak Lakhera, DMS, RIE Bhopal; Eram S. Rao, *Associate Professor*, Department of Food Technology, Bhaskaracharya College of Applied Science, University of Delhi; Jitendra Verma, *TGT*, Health and Physical Education, Kendriya Vidyalaya Sangathan, Sec-II, Rohini, New Delhi; Kamlesh Soni, DMS, R.I.E. Bhubaneswar; Kusum Yadav, Rao Birender Singh College of Education, Rewari; Mahendra Barua, *T.G.T.*, Physical Education, R.I.E. Bhopal; Ravipal Singh, K.V.S. Shakurbasti (KVS), Delhi;

Sujit Panigrahi, *Founder and C.E.O.*, Education Startup Fitness 365, Sohna Road, Gurugram, Haryana;

We acknowledge the contribution of Blue Fish Designs Pvt. Ltd. for making the illustrations for this textbook, Azra Khatoon, Shefali Sharma, and Aakansha, *Junior Project Fellow*, NCERT, New Delhi for going through the material, Rani Sharma (*PA*) for creating a CRC, Mohd. Kashif, Ruby Malik and Ravi Sharma for typing the material and Bittoo, *D.T.P. Operator* for laying out the text. The contributions of Soumma Chandra, *Assistant Editor* (Contractual), and Rajshree Saini, *DTP Operator* (Contractual) are also acknowledged for editing and preparing the layout this book.

The Council gratefully acknowledges the valuable suggestions and feedback received during try-out by teachers.

HOW TO USE THIS BOOK

It is expected that the transaction of this book titled *Health and Physical Education* for Class X will enable the teachers and students to transform theoretical knowledge into action. Further the teachers will be empowered to bring out the positive change through modification during learning and practicing various games and sports among students. In schools, where infrastructural facilities are not available, the teacher may improvise them with the help of students like playground, equipments, rules of the games, etc. This will also develop creativity among children. Playing games and sports in all conditions important for holistic health.

The book contains 13 chapters. The first chapter deals with Physical Education and its relationship with other subjects. The second chapter explains the effects of physical activities on human body. The third chapter discusses the issues related to growth and development during adolescence. Chapters 4, 5, 6, and 7 discuss the details of individual and team games.

Efforts have been made to include latest rules and regulations of various games and sports and other related areas. Since the rules and regulations keep on changing, teachers and students may visit the official website of the recognised Federation or Association of the different games and sports. The names of some websites are given separately. The teachers and students may also see some of the videos of different games and sports given in the official websites related to a particular federation for understanding the rules and learning the skills.

Yoga for Healthy Living is the eighth chapter. Chapter 9 explains dietary considerations and food quality. Safety for healthy living, healthy community living and social health are discussed in Chapters 10, 11 and 12 respectively. The last chapter provides details about the agencies and awards promoting health, sport and yoga.

The book also includes information about corona virus, more specifically known as COVID-19 causing massive loss of human lives and creating panic across the world. It is important to prevent and deal with this challenge and to empower the younger generation to face this challenge. The book has provided links as well as, added the relevant information at suitable places.

The overall objective of this book is to make games and sports joyfull and thereby making children physically fit, mentally alert and emotionally strong. The teacher may also encourage to select games or sports of their choice by maintaining social distancing

for practical experience. Yogic practices need to be more focussed and considered as an integral part of their everyday life in the present context.

The teacher should also emphasise on developing life skills, such as, understanding self, social awareness, team building, cooperation, empathy, communication skill, creative thinking and also development of values.

The students can correlate the given activities in the textbook with their day-to-day life.

As a teacher, you have to understand that this textbook is different from other subject textbooks in the sense that its contents need to be understood well and applied throughout life for one's own well being and that of others. Its use should not, therefore, be solely examination driven. Even a general discussion from time to time would be useful. Activities included in it, are of practical nature and enjoyable and one can make sure that the concepts are clarified by involving students in experiential learning. Physical activities and exercises of all kinds have been given to ensure the development of fitness and questioning skills, including life skills.

We would welcome your feedback on this book in terms of — How did you like this textbook? What are your experiences in organising or being a part of various activities? What were the difficulties faced by you? What changes would you like to see in the next version of this book? Do write to us on all these and other matters related to this textbook. You could be a parent, a teacher, a student or just a casual reader. You can send your feedback in the form given at the end of this book to the undersigned.

We sincerely hope you enjoy this book and learn more than it offers.

New Delhi
May 2020

Saroj Yadav
Professor and Dean (Academic)
National Council of Educational
Research and Training

CONTENTS

<i>Foreword</i>	<i>iii</i>
<i>How to use this book</i>	<i>ix</i>
Chapter 1 Physical Education: Relation with other Subjects	1 - 10
Chapter 2 Effects of Physical Activities on Human Body.....	11 - 22
Chapter 3 Growth and Development during Adolescence	23 - 34
Chapter 4 Individual Games and Sports I.....	35 - 51
Chapter 5 Individual Games and Sports II.....	52 - 76
Chapter 6 Team Games and Sports I.....	77 - 110
Chapter 7 Team Games and Sports II.....	111 - 132
Chapter 8 Yoga for Healthy Living	133 - 164
Chapter 9 Dietary Considerations and Food Quality	165 - 180
Chapter 10 Safety Measures for Healthy Living	181 - 192
Chapter 11 Healthy Community Living.....	193 - 204
Chapter 12 Social Health	205 - 214
Chapter 13 Agencies and Awards Promoting Health, Sports and Yoga	215 - 223

LIST OF USEFUL WEBSITES

Note: Please refer to the home websites of the recognised federations of the various sports for updated information about rules and regulations.

- <https://www.ioc.org>
- <https://www.arisf.sports>
- <https://www.iaaf.org> (Athletics)
- <https://www.BWFBadminton.org> (Badminton)
- <https://www.fiba.basketball> (Basketball)
- <https://www.fifa.com> (Football)
- <https://www.gymnastics.sports> (Gymnastics)
- <https://www.IHF.info> (Handball)
- <https://www.Fih.ch> (Hockey)
- <https://www.ijf.org> (Judo)
- <https://www.fina.org> (Swimming)
- <https://www.ittf.com> (Table Tennis)
- <https://www.itftennis.com> (Tennis)
- <https://www.fivb.com> (Volleyball)
- <https://www.unitedworldwrestling.org> (Wrestling)
- <https://www.mohfw.gov.in>
- <https://main.mohfw.gov.in/sites/default/files/schooladvisory.pdf>

Note: For updation of every game and sport, you can consult or refer to rule books of various sport's federations.