

HUMAN ECOLOGY AND FAMILY SCIENCES PART I



11136

विद्यया ऽ मृतमश्नुते



एन सी ई आर टी
NCERT

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

First Edition*July 2009 Sravana 1931***Reprinted***May 2017 Jyeshtha 1939**April 2018 Chaitra 1940**July 2019 Shravana 1941**July 2021 Shravana 1943***PD 45T RSP****© National Council of Educational
Research and Training, 2009****₹ 165.00***Printed on 80 GSM paper with NCERT
watermark*

Published at the Publication Division
by the Secretary, National Council of
Educational Research and Training,
Sri Aurobindo Marg, New Delhi 110 016
and printed at Shagun Offset Press, F-476,
Sector – 63, Noida 201 301 (U.P.)

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
Bangaluru 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 : *Vipin Dewan*
Production Officer : *A.M. Vinod Kumar*

Cover and Layout Design
Shweta Rao

Illustrations
Seema Jabin Husain

FOREWORD

The National Curriculum Framework (NCF) 2005 recommends that children's life at school must be linked to their life outside the school. This principle marks a departure from the legacy of bookish learning which continues to shape our system and cause a gap between the school, home and community. The syllabi and textbooks developed on the basis of NCF signify an attempt to implement this basic idea. They also attempt to discourage rote learning and the maintenance of sharp boundaries between different subject areas. We hope these measures will take us significantly further in the direction of a child-centred system of education outlined in the National Policy on Education (1986).

The success of this effort depends on the steps that school principals and teachers will encourage children to reflect on their own learning and to pursue imaginative activities and questions. We must recognise that, given space, time and freedom, children generate new knowledge by engaging with the information passed on to them by adults. Treating the prescribed textbook as the sole basis of examination is one of the key reasons why other resources and sites of learning are ignored. Inculcating creativity and initiative is possible if we perceive and treat children as participants in learning, not as receivers of a fixed body of knowledge. These aims imply considerably change in school routines and mode of functioning. Flexibility in the daily time-table is as necessary as rigour in implementing the annual calendar so that the required numbers of teaching days are actually devoted to teaching.

This textbook marks NCERT's resolve to reconstruct knowledge in all areas from the perspective of the learner and the dynamic socio-economic realities of contemporary India. The National Focus Group on *Gender Issues in Education*, appointed under the auspices of NCF-2005, emphasises the urgency of incorporating women's perspective for epistemologically redefining conventionally defined subjects like home science. We hope that the present textbook will make this subject free of gender bias and capable of challenging young minds and teachers for creative study and practical work.

NCERT appreciates the hardwork done by the Textbook Development Committee and its Chief Advisors, Neerja Sharma, Lady Irwin College, University of Delhi and Shagufa Kapadia, M.S. University, Baroda, Vadodra. We are indebted to the institutions and organisations which have generously permitted us to draw upon their resources, material and personnel. We are especially grateful to the members of the National Monitoring Committee, appointed by the Department of Secondary and Higher Education, Ministry of Human Resource Development under the Chairpersonship of *Professor* Mrinal Miri and *Professor* G.P. Deshpande, for their valuable time and contribution. We are particularly grateful to the members of the sub-committee for Human Ecology and Family Sciences (HEFS), Mariamma Varghese, *former Vice-Chancellor*, SNDT Women's University, Mumbai, and S. Anandalakshmy, *former Director*, Lady Irwin College, University of Delhi for their contribution for reviewing the textbook.

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

New Delhi
April 2009

Director
National Council of Educational
Research and Training

PREFACE

The textbook on Human Ecology and Family Sciences (HEFS), a subject so far known as 'Home Science', has been reframed keeping in view the principles of the National Curriculum Framework – 2005 of the NCERT. Conventionally, the field of Home Science encompasses five areas, namely, Food and Nutrition, Human Development and Family Studies, Fabric and Apparel, Resource Management, and Communication and Extension. All these domains have their specific content and focus that contribute to the study of the individual and the family in Indian socio-cultural context. They also provide ample scope for professional avenues of higher education and career opportunities in this applied field. Many components of the field have grown to become specialised areas and even super-specialisations. They range from professions catering to various health and service institutions/agencies, educational organisations, industry and business houses of textiles, garments, foods, toys, teaching-learning materials, labour saving devices, ergo-nomically appropriate equipment and work stations. In Class XI the 'self and family' and the 'home' are focal points for understanding the dynamics of individual lives and social interaction. In Class XII, the emphasis will be on 'work and careers' through the life-span.

The subjects in HEFS concern themselves with enhanced human resources as well as productivity, and with better quality of life for individuals and society in general. People cannot be productive if they are physically unwell due to unhygienic personal and environmental conditions, children cannot learn if they are mal-nourished, or scarred from abuse and neglect, people cannot work if disturbed by family turmoil or resource management problems, or when preoccupied with rejection in the family or domestic violence. Conversely, human beings whose development is fostered by positive environmental surroundings, nurturing relationships, good nutrition, access to basic amenities for health, safety and sanitary living conditions, can be well-adjusted and productive citizens.

The possibilities of teaching and research careers are present at all levels of education, be it at school or college or university. To the professionals in the specialisation of Food and Nutrition, the spectrum of opportunities is wide ranging from the service sector as dietitians, healthcare consultants/counsellors to the food industry, in catering and food service management/institutional management, in accordance with the thrust of their educational inputs and acquired interests, skills and competencies. For professionals in Human Development and Family Studies, job opportunities range from being at several cadres of functionaries in social development organisations for children, adolescents, women and families, in early childhood care and education programmes, to being professionals in counselling settings at various levels and age groups. Those trained in Fabric and Apparel find their future careers in textile design, textile or fashion or garment industry, and entrepreneurship.

To the Resource Management trainees, the career choices abound between interior decoration, hospitality administration, ergonomics, to consumer education

and services as well as entrepreneurship, event management, investment and insurance enterprising. Those who specialise in Communication and Extension can work in media related fields, or be welfare and programme officers, administrators and supervisors in field-based activities of NGOs, private and public sector organisations.

The new textbook has attempted to break away from the conventional framework of the discipline in significant ways. In the new conceptualisation the boundaries between different areas of the discipline have been dissolved. This has been done to enable students to develop a holistic understanding of life in the home and outside. A special effort has been made to communicate respect for every student's life at home and in society by making the curriculum appropriate for both boys and girls, living in different contexts, including those who are homeless. It has also been ensured that all the chapters address the significant principles of equity, equality and inclusiveness. These include gender sensitivity, respect for diversity and plurality in relation to rural-urban and tribal location, caste, class, value for both transformative traditions and modern influences, concern for society and pride in national symbols.

The practicals have an innovative and contemporary character and reflect the utilisation of new technology and applications that would strengthen critical engagement with the lived realities of people. More specifically, there is a deliberate shift to field-based experiential learning. The practicals are designed to foster critical thinking. Further, conscious effort has been made to move away from stereotyped gender roles, thus making the experiences more inclusive and meaningful for both boys and girls. It is imperative that the practicals are conducted keeping in mind the available resources.

The textbook adopts a developmental framework using the life-span approach. However, it is structured a little differently in terms of the sequence of stages in human development. The first unit begins with adolescence, as this is the stage of development being experienced by the student. Beginning with one's own stage of development would instill interest and enable identification with the physical, emotional, social and cognitive changes that the student is undergoing. Once the adolescent learner develops some understanding of the self, the second unit spans to the diverse contexts in which one functions — these include the family, school, community and society. Relationships, needs and concerns stemming from each context are dealt with in this unit. Following this are two units dealing with the study of ecological and family issues arising in childhood and adulthood respectively. This approach would help the learner understand and analyse the significance of nutrition, health and well-being, growth and development, education and communication, apparel and management during these two phases of life, thereby completing the cycle of development. Thus the textbook addresses some significant concerns and challenges of each life stage, providing reasonable suggestions and resources necessary to enhance the quality of life of self, family, community and society.

OBJECTIVES

The HEFS textbook has been framed to enable the learners to

1. develop an understanding of the self in relation to family and society.
2. understand one's role and responsibilities as a productive individual and as a member of one's family, community and society.
3. integrate learning across diverse domains and form linkages with other academic subjects.
4. develop sensitivity and critical analysis of issues and concerns of equity and diversity.
5. appreciate the discipline of HEFS for professional careers.

NOTE FOR THE TEACHERS

As mentioned in the Preface, this textbook is intended to reflect a holistic perspective of what has been conventionally known as Home Science. The textbook is structured in two parts, i.e., Part – I and Part – II with a total of four units comprising 19 chapters. The units are organised along a developmental framework. Unit I begins with the stage of adolescence and related concerns. Unit II deals with the expanding interactions of the adolescent with others in the family, school, community and society, and the needs emerging from each of these contexts. Units III and IV, i.e., Part – II, focus on childhood and adulthood respectively. The correspondence of the units and the chapters in the textbook with the NCERT syllabus is indicated below.

PART - I		
Units and Chapters in Textbook		Units and Sections in NCERT Syllabus
Chapter	Title of the Chapter	Units and Sections
1.	Introduction: HEFS: Evolution of the discipline and its relevance to quality of life	Introduction: HEFS: Evolution of the discipline and its relevance to quality of life
Unit I Understanding oneself: Adolescence		
2.	Understanding the Self	
	A. What makes me 'I':	A. Sense of self understanding who am I?
	B. Development and Characteristics of the Self	B. Characteristics and needs
	C. Influences on Identity: How do we Develop a Sense of Self?	C. Influences on identity
3.	Food, Nutrition, Health and Fitness	D. Food, nutrition, health and fitness
4.	Management of Resources	E. Management of resources — time money, energy and space
5.	Fabrics Around Us	F. Fabric and apparel
6.	Media and Communication Technology	G. Media and communication technology
7.	Effective Communication Skills	H. Communication skills
8.	Living and Working in a Global Society	I. Living and working in a global society
Unit II Understanding Family, Community and Society		
9.	Relationships and interactions with 'significant others' within:	A. Relationships and interactions with 'significant others' within:

	A. Family	- Family
	B. School: Peers and Educators	- School-peers and educators
	C. Community and Society	- Community
		- Society
10.	Concerns and Needs in Diverse Contexts: Family, School, Community and Society	B. Concerns and Needs in Diverse Contexts: Family, School, Community and Society
	A. Nutrition, Health and Hygiene	a. Health, nutrition and hygiene
	B. Work, Worker and Workplace	b. Activity, work and environment
	C. Resource Availability and Management	c. Resource availability and management
	D. Learning, Education and Extension	d. Learning, education and extension
	E. Textile Traditions in India	e. Textile heritage of India
PART - II		
Unit III Childhood		
11.	Survival, Growth and Development	- Survival, growth and development
12.	Nutrition, Health and Well-Being	- Nutrition, health and well-being
13.	Care and Education	- Care and education
14.	Our Apparel	- Clothes and apparel
		- Children with special needs
		- Socio-cultural influences on children
Unit IV Adulthood		
15.	Health and Wellness	- Health and wellness
16.	Financial Management and Planning	- Financial planning and management
17.	Care and Maintenance of Fabrics	- Care and maintenance of fabrics and apparel
18.	Perspectives in Communication	- Perspectives in communication
19.	Individual Responsibilities and Rights	- Individual responsibilities and rights

Each chapter begins with a brief introduction to the unit followed by learning objectives which serve as a useful guide to the teacher and the student. Most chapters also include instructions for activities. Please ensure that the activities are carried out, as this would encourage active participation of the students, create and sustain interest, and enhance learning. The activities may be modified to adapt to local contexts (e.g., urban, rural, tribal, different social class groups) as well as to gender variations.

The practicals depart from the conventional laboratory experiments and direct the student towards field based experiences. This would enable the learners to engage in first-hand interactions with children, adolescents and adults in real life contexts, including the family, neighbourhood, and community. The practicals are

also aimed at developing basic research skills of observation and interview. The teachers are welcome to modify the practicals in accordance with the resources available in their specific contexts.

Each chapter includes key terms; and definitions are provided only for the more complex terms. Review questions are also provided at the end of each chapter with the purpose of enabling both teachers and students to recapitulate and revise the main ideas presented in the chapter. The key terms and review questions will also help the students to connect with the content on which they are likely to be examined.

The present textbook on Human Ecology and Family Sciences is the first attempt to present at the higher secondary level contemporary and integrated perspectives on the five areas — Food and Nutrition, Human Development and Family Studies, Fabric and Apparel, Resource Management, and Communication and Extension. The aim is to project the field as a professional discipline.

Your feedback to the textbook is of utmost importance for us to improve the content for the next edition of the textbook. A feedback form has been given on the page *xiv* consisting of a set of questions related to different dimensions of the textbook. Please spare some time to respond to these questions after you have used the book. You may encourage the students also to respond through these forms or on a separate sheet. In addition, you are free to provide any other comments or suggestions. We look forward to your response. You may answer on the sheets attached and send the feedback by post at the given address. **The feedback form is also available on the NCERT website www.ncert.nic. The form can be filled and also sent to dws_ncert@yahoo.co.in**

TEXTBOOK DEVELOPMENT COMMITTEE

CHIEF ADVISORS

Neerja Sharma, *Professor*, Department of Human Development and Childhood Studies, Lady Irwin College, University of Delhi, New Delhi

Shagufa Kapadia, *Professor*, Department of Human Development and Family Studies, Faculty of Family and Community Sciences, M.S. University of Baroda, Vadodara, Gujarat

MEMBERS

Annu Jacob Thomas, *Professor*, School of Gender and Development Studies, Indira Gandhi National Open University, New Delhi

Archna Bhatnagar, *Reader*, Department of Post Graduate Studies and Research in Home Science, SNDT Women's University, Mumbai, Maharashtra

Asha Rani Singh, *PGT*, Home Science, Laxman Public School, New Delhi

Dorothy Jaganathan, *Reader*, Department of Food Service Management and Dietetics, Avinashilingam University for Women, Coimbatore, Tamil Nadu

Hitaishi Singh, *Reader*, Home Science, R.C.A. Girls (P.G.) College, Dr. B.R. Ambedkar University, Mathura, Uttar Pradesh

Indu Sardana, *Former TGT*, Home Science, Sarvodaya Kanya Vidyalaya, Malviya Nagar, New Delhi

Meenakshi Gujral, *Lecturer*, Amity School of Business, Amity University, Noida, Uttar Pradesh

Meenakshi Mital, *Reader*, Department of Resource Management and Design Application, Lady Irwin College, University of Delhi, New Delhi

Mona Suri, *Reader*, Department of Fabric and Apparel Science, Lady Irwin College, University of Delhi, New Delhi

Nandita Chaudhary, *Reader*, Department of Human Development and Childhood Studies, Lady Irwin College, University of Delhi, New Delhi

Puja Gupta, *Sr. Lecturer*, Department of Resource Management and Design Application, Lady Irwin College, University of Delhi, New Delhi

Ravikala Kamath, *Former Professor*, Department of Post Graduate Studies and Research in Home-Science, SNDT Women's University, Mumbai, Maharashtra

Rekha Sharma Sen, *Reader*, Child Development Faculty, School of Continuing Education, Indira Gandhi National Open University, New Delhi

Sarita Anand, *Reader*, Department of Development Communication and Extension, Lady Irwin College, University of Delhi, New Delhi

Shashi Guglani, *Reader*, Department of Education, Lady Irwin College, University of Delhi, New Delhi

Shobha A. Udipi, *Professor*, Department of Food Science and Nutrition, Faculty of Home Science, SNDT Women's University, Mumbai, Maharashtra

Shobha B., *Reader*, Department of Resource Management, Smt. VHD Central Institute of Home Science College, Bangalore University, Bangalore, Karnataka

Shobha Nandwana, *Reader*, Department of Human Development and Family Studies, College of Home Science, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan

Simmi Bhagat, *Reader*, Department of Fabric and Apparel Science, Lady Irwin College, University of Delhi, New Delhi

Sunanda Chande, *Former Principal*, SVT College of Home Science (Autonomous), SNDT Women's University, Mumbai, Maharashtra

Veena Kapur, *Reader*, Department of Fabric and Apparel Science, Lady Irwin College, University of Delhi, New Delhi

COORDINATOR

Sushma Jaireth, *Professor*, Department of Gender Studies, NIE, NCERT, New Delhi

ACKNOWLEDGEMENTS

The National Council of Educational Research and Training (NCERT) acknowledges the valuable contribution of the organisations and individuals involved in the development of this textbook.

Department of Women's Studies (DWS) could not have gone ahead with this endeavour without the direction and guidance of Krishna Kumar, *former Director*, NCERT.

We also gratefully acknowledge contributions of Mariamma Varghese, *former Vice-Chancellor*, SNDT Women's University and S. Anandalakshmy, *former Director*, Lady Irwin College, University of Delhi, for their expert review, comments and suggestions for this textbook. The photographs in the book provided on page nos. 197, 198, 201, 202, 205, 206, 209, 210 by Veena Kapoor and Simmi Bhagat from Lady Irwin College, Delhi and on page no 63 by Sushma Jaireth from NCERT, Delhi are acknowledged.

Special thanks are due to the members of the Syllabus Development Committee and its Chairperson, Arvind Wadhwa, *former Reader*, Department of Food and Nutrition, Lady Irwin College, University of Delhi, for their valuable contribution in the development of HEFS syllabus initiated for the first time by NCERT. Acknowledgements are also due to the team members of DWS, Neerja Rashmi, *Reader* and Mona Yadav, *Sr. Lecturer*, for their support during the development of the syllabus.

NCERT is grateful to Gopal Guru, *Professor*, Centre for Political Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi, for his critical comments and insightful observations.

The contribution of Meenakshi Tomer, the *Computer Operator* and Shumaila Fatma and Hari Darshan Lodhi, the *DTP Operator* are also duly acknowledged.

Thanks are due to the Head, faculty, and administration of DWS for their constant cooperation during the development of the textbook. Last but not the least, the efforts of the Publication Department, NCERT are also duly acknowledged.

FEEDBACK FORM FOR HEFS TEXTBOOK FOR CLASS XI

Please rate the following questions by putting a number, rating from 1 to 7 in the box given alongside. '1' being 'Strongly Disagree' and '7' being 'Strongly Agree'.

7	6	5	4	3	2	1
Strongly Agree					Strongly Disagree	

1. The textbook communicates an integrated perspective of the field of HEFS? ☐
2. The life-cycle approach is liked by the students/teachers? ☐
3. The language is simple and can be clearly understood by students. ☐
4. The activities are
 - (a) relevant to the chapter content ☐
 - (b) interesting to carry out ☐
 - (c) difficult to carry out ☐
5. The practicals are
 - (a) relevant to the chapter content ☐
 - (b) possible to carry out in our specific context ☐
 - (c) interesting and enjoyable in carrying out ☐
6. (a) The key terms were: Very useful /Not at all useful
(b) The review questions were: Very useful /Not at all useful
7. Which chapters did you like the most? Give reasons for your answer.
8. Please give your suggestions to improve the textbook.

The form may be posted or sent through email.

(This feedback form can be accessed on the website www.ncert.nic.in)

Postal address

Dr. Mona Yadav, *Professor and Head*

Department of Gender Studies,

NCERT, Sri Aurobindo Marg, New Delhi 110016

Email: dws_ncert@yahoo.co.in

CONTENTS

PART – I

	<i>Foreword</i>	<i>i</i>
	<i>Preface</i>	<i>iii</i>
Chapter 1	Introduction HEFS: Evolution of the Discipline and its Relevance to Quality of Life	1
Unit I	UNDERSTANDING ONESELF ADOLESCENCE	5
Chapter 2	Understanding the Self A. What makes me 'I' B. Development and Characteristics of the Self C. Influences on Identity How do we Develop a Sense of Self?	6 11 18
Chapter 3	Food, Nutrition, Health and Fitness	28
Chapter 4	Management of Resources	47
Chapter 5	Fabrics Around Us	57
Chapter 6	Media and Communication Technology	73
Chapter 7	Effective Communication Skills	91
Chapter 8	Living and Working in a Global Society	102
Unit II	UNDERSTANDING FAMILY, COMMUNITY AND SOCIETY	105
Chapter 9	Relationships and Interactions with 'Significant Others' A. Family B. School: Peers and Educators C. Community and Society	106 121 127
Chapter 10	Concerns and Needs in Diverse Contexts A. Nutrition, Health and Hygiene B. Work, Worker and Workplace C. Resource Availability and Management D. Learning, Education and Extension E. Textile Traditions in India	140 155 163 180 193
	<i>References</i>	213
	<i>Appendix</i> Syllabus	215

CONTENTS OF PART II

Unit III CHILDHOOD

Chapter 11 Survival, Growth and Development

Chapter 12 Nutrition, Health and Well-Being

Chapter 13 Care and Education

Chapter 14 Our Apparel

Unit IV ADULTHOOD

Chapter 15 Health and Wellness

Chapter 16 Financial Management and Planning

Chapter 17 Care and Maintenance of Fabrics

Chapter 18 Perspectives in Communication

Chapter 19 Individual Responsibilities and Rights

THE FINALE Crossword Puzzle