

ENVIRONMENTAL STUDIES

(Part One)

STANDARD FIVE



The Constitution of India

Chapter IV A

Fundamental Duties

ARTICLE 51A

Fundamental Duties- It shall be the duty of every citizen of India—

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities, to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- (k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of six and fourteen years.

Education Department's Sanction Number :
Pra Shi Sa/2014-15/H/Bhasha/Manjuri/D-505/727 Dated : 23.2.2015

ENVIRONMENTAL STUDIES (Part One) STANDARD FIVE



**Maharashtra State Bureau of Textbook
Production and Curriculum Research, Pune.**



229CUY

The digital textbook can be obtained through DIKSHA APP on a smartphone by using the Q. R. Code given on title page of the textbook and useful audio-visual teaching-learning material of the relevant lesson will be available through the Q. R. Code given in each lesson of this textbook.

First Edition : 2015
Sixth Reprint : 2021

© Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune 411 004.

The Maharashtra State Bureau of Textbook Production and Curriculum Research reserves all rights relating to the book. No part of this book should be reproduced without the written permission of the Director, Maharashtra State Bureau of Textbook Production and Curriculum Research, 'Balbharati', Senapati Bapat Marg, Pune 411 004.

Science Subject Committee :

- Dr Ranjan Kelkar, Chairman
- Smt. Mrinalini Desai, Member
- Dr Dilip R. Patil, Member
- Shri. Atul Deulgaonkar, Member
- Dr Bal Phondke, Member
- Shri. Rajiv Arun Patole, Member - Secretary

Geography Subject Committee :

- Dr N. J. Pawar, Chairman
- Dr Medha Khole, Member
- Dr Inamdar Irfan Ajiz, Member
- Shri. Abhijit Ghorpade, Member
- Shri. Sushilkumar Tirthkar, Member
- Smt. Kalpana Mane, Member
- Shri. Ravikiran Jadhav, Member-Secretary

Civics Subject Committee :

- Dr Yashwant Sumant, Chairman
- Dr Mohan Kashikar, Member
- Dr Shailendra Devlankar, Member
- Dr Uttara Sahasrabuddhe, Member
- Shri. Arun Thakur, Member
- Shri. Vaijanath Kale, Member
- Shri. Mogal Jadhav, Member-Secretary



Cartographer : Shri. Ravikiran Jadhav

Cover : Smt. Anuradha Dangare

Illustrations : Shri. Nilesh Jadhav, Shri. Deepak Sankpal, Shri. Mukim Tamboli, Shri. Sanjay Shitole, Shri. Vivekanand Patil, Shri. Amit Jalwi, Shri. Pratik Kate, Shri. Rupesh Gharat, Shri. Manoj Kamble, Shri. Sameer Dhurade (Space related photographs)

Typesetting : DTP Section, Textbook Bureau, Pune

Paper : 70 GSM Creamwove

Print Order : N/PB/2021-22/(1,00,000)

Printer : M/s Shree Printers, Pune



Co-ordination

Shri. Rajiv Arun Patole
Special Officer for Science
Smt. Vinita Tamne
Assistant Special Officer,
Science

Shri. Mogal Jadhav
Special Officer for History
and Civics
Smt. Varsha Kamble
Assistant Special Officer,
History and Civics

Shri. Ravikiran Jadhav
Special Officer for
Geography

Translation :

Smt. Mrinalini Desai
Ms. Neena Abhyankar

Scrutiny :

Dr S.R. Jog

Co-ordination :

Dhanavanti Hardikar
Academic Secretary for Languages
Santosh Pawar
Assistant Special Officer, English



Production

Shri. Sachchitanand Aphale
Chief Production Officer

Shri. Vinod Gawde
Production Officer

Mrs. Mitali Shitap
Assistant Production Officer

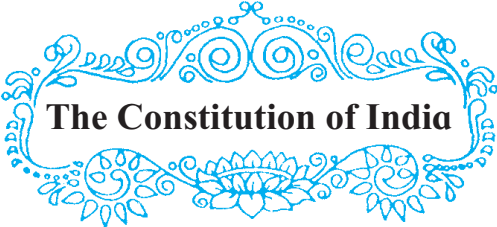
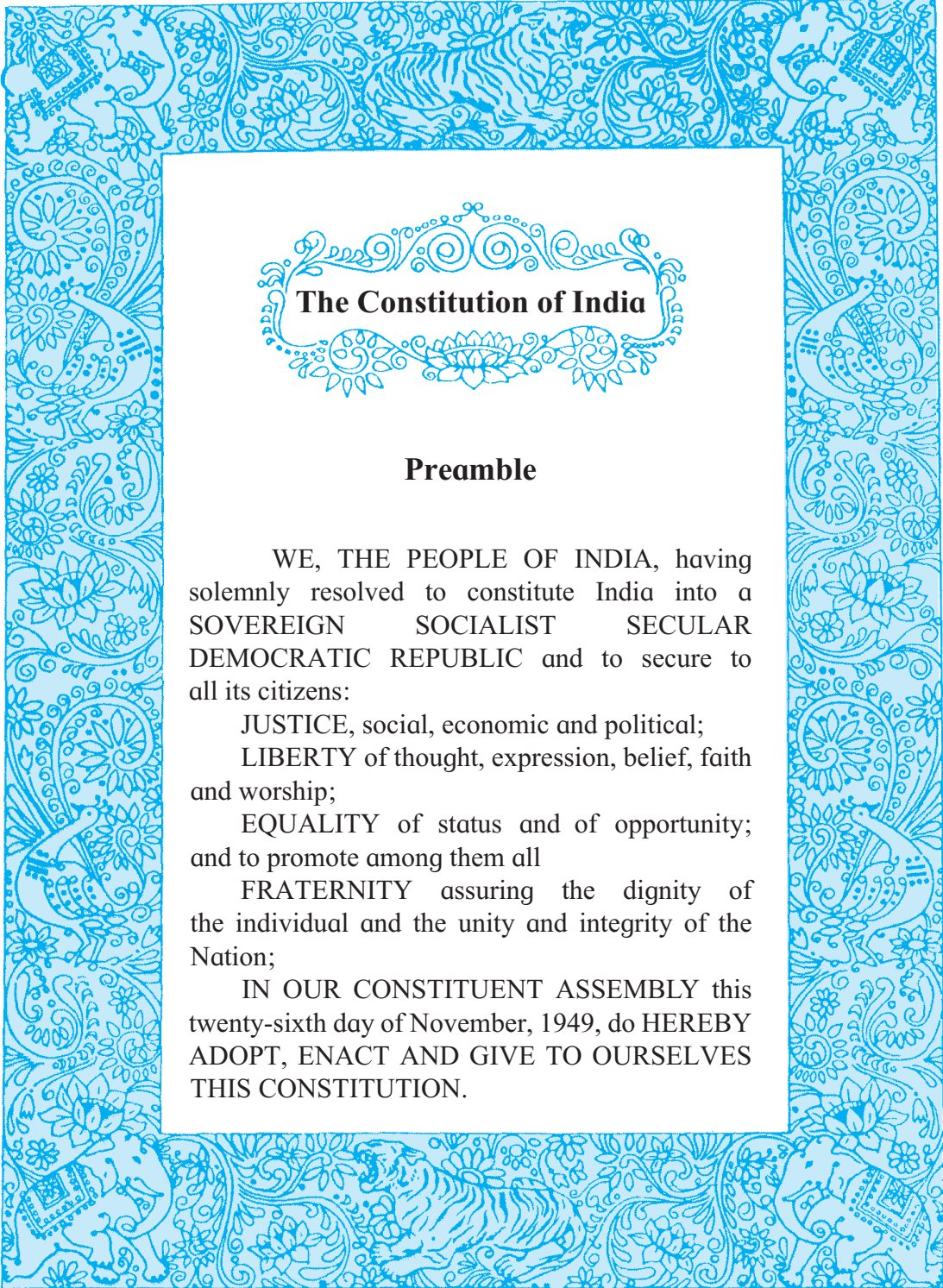


Publisher

Shri. Vivek Uttam Gosavi, Controller

Maharashtra State Textbook Bureau, Prabhadevi, Mumbai - 400 025.





The Constitution of India

Preamble

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens:

JUSTICE, social, economic and political;
LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity;
and to promote among them all

FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation;

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.

NATIONAL ANTHEM

Jana-gana-mana-adhināyaka jaya hē
Bhārata-bhāgya-vidhātā,

Panjāba-Sindhu-Gujarāta-Marāthā
Drāvida-Utkala-Banga

Vindhya-Himāchala-Yamunā-Gangā
uchchala-jaladhi-taranga

Tava subha nāmē jāgē, tava subha āsisa māgē,
gāhē tava jaya-gāthā,

Jana-gana-mangala-dāyaka jaya hē
Bhārata-bhāgya-vidhātā,

Jaya hē, Jaya hē, Jaya hē,
Jaya jaya jaya, jaya hē.

PLEDGE

India is my country. All Indians
are my brothers and sisters.

I love my country, and I am proud
of its rich and varied heritage. I shall
always strive to be worthy of it.

I shall give my parents, teachers
and all elders respect, and treat
everyone with courtesy.

To my country and my people,
I pledge my devotion. In their
well-being and prosperity alone lies
my happiness.

Preface

The 'Primary Education Curriculum 2012' was prepared in the State of Maharashtra following the 'Right of Children to Free and Compulsory Education Act, 2009', the 'National Curriculum Framework 2005' and the 'Maharashtra State Curriculum Framework 2010'. The Textbook Bureau has launched a new series of textbooks based on this syllabus approved by the State Government from the academic year 2013-2014. We are happy to place this textbook 'Environmental Studies (Part One)' Standard Five in this series in your hands.

Our approach while designing this textbook was that the entire teaching-learning process should be child-centred, emphasis should be given on active learning and constructivism and at the end of Primary Education the students should have attained the desired competencies and that the process of education should become enjoyable and interesting.

There are many colourful illustrations and maps in this textbook. Some activities have been included in this textbook under the titles 'Can you tell?', 'Try this.', 'Use your brain power!'. They will help the students to understand the concepts introduced in the lessons and will also reinforce them. The textbook will motivate the children to observe their environment. Conscious efforts have been made to impart values which are relevant today in the context of this textbook.

Variety in the exercises will help the children to revise and retain the concepts in the lessons and will motivate them to study on their own. They will also help the teacher with continuous, comprehensive evaluation.

This textbook introduces the children to their natural, social and cultural environment. It attempts to develop the students' skills of problem solving and application and a healthy attitude towards the environment.

The language of presentation used in this book is simple. The topics have been presented in an inter-disciplinary manner without forming compartments of science, geography and civics. It may lead to an approach that looks at several dimensions of an issue or topic simultaneously. We have tried to keep in mind the diverse experiences of all the children in Maharashtra while writing the book.

This book was scrutinized by teachers from all parts of the State, by educationists, experts and members of the syllabus committee to make it as flawless and useful as possible. Their comments and suggestions have been duly considered by the Subject Committees while finalising the book.

The members of Science, Geography and Civics Subject Committees, Panel members, quality reviewers and artists have taken great pains to prepare this book. The Bureau is thankful to all of them.

We hope that this book will receive a warm welcome from students, teachers and parents.



(C. R. Borkar)
Director

Pune

Date : March 5, 2015

Maharashtra State Bureau of Textbook
Production and Curriculum Research, Pune.

Science Panel : • Smt. Sucheta Phadke • Shri. V. D. Lale • Smt. Sandhya Lahare • Shri. Shailesh Gandhe
• Shri. Abhay Yavalkar • Shri. Rajabhau Dhepe • Dr Shamin Padalkar • Shri. Vinod Tembe
• Dr Jaysingrao Deshmukh • Dr Lalit Kshirsagar • Dr Jayashri Ramdas • Dr Manasi Rajadhyaksh
• Shri. Sadashiv Shinde • Shri. Baba Sutar • Shri. Arvind Gupta

Geography Panel : • Shri. Bhaidas Somvanshi • Shri. Vikas Jhade • Shri. Tikaram Sangrame
• Shri. Gajanan Suryavanshi • Shri. Padmakar P. Kulkarni • Shri. Samansing Bhil • Shri. Vishal Andhalkar
• Smt. Rafat Sayyad • Shri. Gajanan Mankar • Shri. Vilas Jamdhade • Shri. Gourishankar Khobre
• Shri. Pundalik Nalawade • Shri. Prakash Shinde • Shri. Sunil More • Smt. Aparna Phadke
• Dr Shrikrishna Gaikwad • Shri. Abhijit Dod • Dr Vijay Bhagat • Smt. Ranjana Shinde • Dr Smita Gandhi

Civics Panel : • Prof. Sadhana Kulkarni • Dr Chaitra Redkar • Dr Shrikant Paranjape • Dr Bal Kamble
• Prof. Fakruddin Bennur • Prof. Nagesh Kadam • Shri. Madhukar Narde • Shri. Vijaychandra Thatte

Environmental Studies-Part 1-Standard V-Learning Outcomes

Suggested Pedagogical Processes	Learning Outcomes
The learner may be provided opportunities in pairs/groups/individually and encouraged to : - observe and explore the animals for the unique and unusual sense of sight, smell, hear, sleep and their response to light, heat, sound etc. - explore the sources of water in their nearby surrounding and how fruits, vegetables, grains, water reach their home and kind of processes/techniques employed to convert grain to flour and flour to <i>roti</i>, purification of water etc. - share experiences and discuss about the information collected or places visited with peers, teachers and elders. - prepare guide routes to reach from one place to another. - collect information from pictures/elders/books/newspapers/magazines/web resources/museums etc., about animals which have very sharp sense of hearing, smell and vision, different landforms such as plain area, hilly area, deserts, etc., and the varieties of flora and fauna, lives of people in such places. - discuss with elders and use pictures, visit museums and collect information related to the lives for food, shelter, availability of water, means of livelihood, practices, customs, techniques of different regions and different time periods. - visit petrol pumps, nature centres, science parks, water treatment plant, bank, health centre, wildlife sanctuaries, cooperative, monument, museum and if possible, far off places with different landforms, lifestyles and livelihoods, etc. to observe and interact with people living there and share experiences in different ways. - observe and share experiences for different phenomena such as how water evaporates, condenses, and dissolves different substances under different conditions, and how food gets spoilt, how seeds germinate and the direction in which roots, shoot grow and conduct simple experiments and activities to find out the same.	The learner- 05.95A.01 explains the super senses and unusual features (sight, smell, hear, sleep, sound, etc.) of animals and their responses to light, sound, food etc. 05.95A.02 explains the use of technology and the process of accessing basic needs (food, water etc.) in our daily life. Explains the role and functions of different institutions in daily life. (Bank, Panchayat, Cooperatives, Police Station, etc.) 05.95A.03 describes the interdependence among animals, plants and humans (for example, communities earning livelihood from animals, dispersal of seeds etc.) 05.95A.04 establishes linkages among terrain, climate resources (food, water, shelter, livelihood) and cultural life. (for example, life in distant/difficult areas like hot/cold deserts) 05.95A.05 makes the activity groups to understand features and properties of objects and materials such as shape, taste, colour, texture, sound, traits etc.

- conduct activities and simple experiments to check the properties/ features of different objects/ seeds/ water/ waste materials, etc.
- observe, explore surroundings and critically think how seeds reach from one place to another, how the plants and trees grow at places where no one plants them, for example forests, who waters them and who possesses them.
- visit the night shelters, people living in camps, old age homes, homes for orphanage/orphans' asylum in surroundings and interact with old and/handicap and who change their means of earning to find out where do people belong to and why they left their places, where their ancestors had been living for ages, migration of people and debate on various such issues in the surroundings.
- enquire from parents, teachers, peers and elders at home/ community to critically think and discuss to reflect on experiences of children related to situations at home, school, neighbourhood.
- discuss freely with peers, teachers and elders about the biases, prejudices, and stereotypes by providing counter examples to one another.
- visit departments/ institutes in the surroundings for example, Bank, Water Board, and Hospital and Disaster management centre and interact with related people and interpret different documents related to them.
- watch videos on different types of landforms and the variety of life forms found in such places, different institutions which cater to the need of societies, behaviour of animals, water scarcity, etc., followed by meaningful discussions and debates on occupations that derive from the peculiar geographical characteristics of different regions.
- perform simple activities, record the observations in the form of table/ sketch/ bar graph/ pie chart/ oral/ written form, etc., interpret and present their findings.
- discuss issues of living beings (plants and animals) as rightful inhabitants of earth, animal rights and ethical treatment to animals.
- share experiences of people who work selflessly for common good/welfare and motivates them.
- participate actively and undertake initiatives of care, share empathy, leadership by working together in groups e.g., in different indoor/outdoor/local/contemporary activities, games, dance, fine art, carry out projects/role play for taking care of a plant(s), feed birds/animals, things/elderly/handicap around them.
- conduct mock drills for emergency and disaster preparedness.
- understanding the processes of rotation and revolution.
- identifying landforms from maps and drawing them. For example, contours, tint method, and understanding the differences between signs and symbols.
- understanding the physical set-up of India.
- collecting information regarding various languages, costumes, festivals and celebrations in India.
- understanding the change in the means of transport and communication with time.

- 05.95A.06 records observations, experience, information with planning. (for example, chart/plotting/histogram/ pie chart) and predicts the patterns in activities and incidences. Establishes the relation between reasoning and effects. (for example, floating / sinking /mixing / evaporation /germination / spoilage / breathing / taste.)
- 05.95A.07 identifies signs, directions, location of different objects/landmarks of a locality/place visited in maps and predicts directions in context of positions of different places for a location.
- 05.95A.08 creates posters, designs, models, set ups, local dishes, sketches, maps (of neighbourhood/different places visited) using a variety of local/waste material and writes poems/slogans/ travelogue etc.
- 05.95A.09 gives opinions on observed/ experienced issues and relates practices/happenings to larger issues of society. (for example, discrimination for access/ownership of resources, migration/displacement/ exclusion, child rights).
- 05.95A.10 suggests ways for hygiene, health, managing waste, disaster/emergency situations and protecting/saving resources (land, fuels, forests etc.) and shows sensitivity for the disadvantaged/deprived.
- 05.95A.11 reads maps with the signs and symbols in a map.
- 05.95A.12 explains/describes the physical set up of India with the help of map.
- 05.95A.13 keeping in mind the political boundaries of India explains the geographical, social and cultural characteristics.
- 05.95A.14 explains the effects on living organisms and the environment because of the excessive use of means of transport and communication.

CONTENTS

No.	Chapters	Page No.
1.	Our Earth and Our Solar System	1
2.	Motions of the Earth.....	6
3.	The Earth and its Living World	11
4.	Environmental Balance	18
5.	Family Values	24
6.	Rules Are for Everyone.	28
7.	Let us Solve our own Problems.....	32
8.	Public Facilities and My School	35
9.	Maps – our Companions	39
10.	Getting to Know India	44
11.	Our Home and Environment	51
12.	Food for All	58
13.	Methods of Preserving Food	64
14.	Transport	68
15.	Communication and Mass Media	73
16.	Water	77
17.	Clothes – our Necessity	82
18.	The Environment and Us	89
19.	Constituents of Food	96
20.	Our Emotional World	103
21.	Busy at Work – our Internal Organs	107
22.	Growth and Personality Development	115
23.	Infectious Diseases and how to Prevent them	121
24.	Substances, Objects and Energy	127
25.	Community Health and Hygiene	133

The following foot notes are applicable :-

1. © Government of India, Copyright 2015.
2. The responsibility for the correctness of internal details rests with the publisher.
3. The territorial waters of India extend into sea to a distance of twelve nautical miles measured from the appropriate base line.
4. The administrative headquarters of Chandigarh, Haryana and Punjab are at Chandigarh.
5. The interstate boundaries amongst Arunachal Pradesh, Assam and Meghalaya shown on this map are as interpreted from the “North-Eastern Areas (Reorganisation) Act.1971,” but have yet to be verified.
6. The external boundaries and coastlines of India agree with the Record/Master Copy certified by Survey of India.
7. The state boundaries between Uttarakhand and Uttar Pradesh, Bihar and Jharkhand and Chhattisgarh and Madhya Pradesh have not been verified by the Governments concerned.
8. The spellings of names in this map, have been taken from various sources.