

**PROJECT BOOK IN**  
**ENVIRONMENTAL EDUCATION**  
**FOR CLASS X**



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

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## FOREWORD

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The National Curriculum Framework (NCF) – 2005, recommends that children’s life at school must be linked to their life outside school. This recommendation has been implemented in the new textbooks published since 2006, in all major subjects. In the context of environment-related awareness, NCF-2005’s vision implies an approach which cuts across the traditional boundaries separating one subject from another. According to this approach, knowledge of environmental concerns and the activities, which might deepen this knowledge and develop a positive attitude, need to be infused in the subject matter of all areas of the school curriculum at different stages. *The National Focus Group on Habitat and Learning*, which amplifies the NCF-2005 perspective, says: “The human habitat displays tremendous variability in space and time and its understanding has to be locale specific albeit in the context of a global vision. A great deal of the knowledge of the environment lies with India’s barefoot ecologists, the people at the grassroots...”

NCF-2005 perceives school children as ecologists in their own right who need to be nurtured by a flexible school routine and teachers who engage with children in the construction of knowledge. In addition to the environment-related subject matter and activities incorporated in the syllabus and textbooks of all the major subjects, the National Council of Educational Research and Training (NCERT) has now decided to bring out project books for students of Classes VI to X. The books comprising this series attempt to build capacity for critical and multi-disciplinary thinking and a positive and problem-solving attitude. They aim at exposing students to the real-life world around them, both in nature and society, in order to enable them to examine, assess and interpret the problems and concerns related to the environment. The ultimate goal is to promote a socio-cultural ethos which facilitates India’s attempt to pursue the path of ethically sound and sustainable development. The activities included in this series of books require extensive and continuous observation and

documentation which would enable students and teachers to notice patterns in phenomena. Uploading of the results of such projects on publicly accessible websites will gradually help the nation to create a transparent and comprehensive database on the environment.

The success of this effort crucially depends on the interest and enthusiasm that school principals, teachers, parents and civil society in general show in encouraging children to carry out the projects and activities outlined in the present series. It is extremely important that students' project work is assessed in a holistic manner, giving due regard to the motivation and enthusiasm of each student rather than through the conventional system of evaluation which ignores individuality and originality.

NCERT appreciates the hard work put in by the Project Book Development Committee in preparing this series and we are especially grateful to Professor Madhav Gadgil for guiding the work of this Committee. Several teachers contributed to the development of this book; we are grateful to their principals for making this possible. We are indebted to the institutions and organisations which have generously permitted us to draw upon their resources, material and personnel. NCERT is thankful to Professor Mrinal Miri and Professor G.P. Deshpande who co-chaired the National Monitoring Committee appointed by the Ministry of Human Resource Development to oversee the implementation of NCF-2005. We thank Dr Kiran Chhokar, Programme Director, Centre for Environmental Education, Delhi, for her invaluable inputs during the meeting of the National Monitoring Committee. As an organisation committed to systemic reforms and continuous improvement in the quality of its products, NCERT welcomes comments and suggestions which will enable us to undertake further revision and refinement of this important series.

New Delhi  
9 January 2009

*Director*  
National Council of Educational  
Research and Training

## NOTE TO THE STUDENTS

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Environmental issues have become a topic of discussion and debate in every nook and corner of the world. The print as well as the electronic media have been giving special focus to these issues. At this very crucial juncture, it is but our responsibility to contribute every possible bit to safeguard our environment. We already have enough knowledge about environmental issues pertaining to our locality, state or country. Let us now become active participants in these issues so that we ourselves work on the problems, find out the causes, and also come out with certain solutions and share our findings with our society.

You must be familiar with some of the environment related concerns having read about them in various textbooks. You have also been carrying out projects since Class VI on some of the related issues. In continuation of the important role that you have been playing through your projects towards conserving the environment, we recommend that you carry out projects this year too.

This project book contains a set of twenty projects of which you are expected to carry out a minimum of two. With the experience that you have had in the previous classes, we hope that you will be more meticulous while working on the projects. As in the previous classes, select appropriate projects on which you will be able to work without going too far from your locality. Modify the methodologies suggested wherever you feel it is necessary but in consultation with the concerned teachers.

As you work on the projects, some of which could be group projects, give maximum cooperation to your friends. Follow official procedure whenever you

need to visit institutes, offices, etc. Be humble and soft spoken while taking an interview or obtaining information and do not hurt the sentiments of others. Whenever you encounter problems in the course of your project, we advise you to consult your teachers.

Earnestly work towards completing your projects successfully. The efforts that you have made and will make in the future, will contribute towards building a better world to live in. Be the one who cleans up the river and not the one who says the river is dirty.

## NOTE TO THE TEACHERS

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The textbooks of different stages, from Class VI to Class IX, irrespective of the subjects, have been carefully and adequately infused with environmental issues and concerns wherever relevant. Ample opportunities have been provided to students in the textbooks to actively engage themselves in activities pertaining to environmental concerns. This project book has also been prepared with the same objective — to further students' involvement and active participation in environmental issues. This will enable them to understand the environmental problems in their vicinity, work on them to obtain first-hand information, and come out with their own solutions. This book contains twenty projects with background, methodology, conclusion and suggestions for follow-up actions. The topics have been chosen keeping in view the environmental concerns that have been discussed in various textbooks for the class. An attempt has been made to make the projects workable in different corners of the country. However, modifications in the methodology or in the title itself may be made to meet the diverse local-specific environmental concerns of different regions.

By the time the students reach Class X they have gained expertise to work on the projects and may not have much difficulty executing the projects by themselves. But with the Board examination round the corner, students may not be very enthusiastic to work on the projects. It is at this stage that the teachers should make extra efforts to give them the much-needed encouragement. The role of the teacher as a facilitator and a guide will still be instrumental in the successful completion of the projects. For this, teachers would be required to assign appropriate projects to each student, modify and fine-tune the methodologies, keep track of the developments and also help

the students wherever necessary to complete the task smoothly. Teachers are expected to ensure that students take up as many projects as possible with the minimum being two projects each.

Evaluation strategy can be prepared independently by the teacher concerned to evaluate the projects. The teacher concerned will decide whether evaluation should be done for every step of the project or on completion of each project. Whether marks or grades are to be allotted is left to the discretion of the teacher or the school authorities. Whatever pattern the teacher or school employs for evaluation, the marks or grades should be shown in the students' report cards. There should be no pass or fail grading. Every student should have completed a minimum of two projects at the end of the academic session.

Last, but not the least, this attempt of introducing a project book is to bring about an attitudinal change in the students towards environmental concerns and to nurture them to become concerned and responsible citizens.

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