



Environment Education

The Environmental Education Syllabus for Higher Secondary Stage is based on the recommendations of the National Focus Group on Habitat and Learning and the National Curriculum Framework-2005 (NCF-2005).

Students pursue a common curriculum up to class X and would have developed a substantive understanding of the environmental issues from the perspective of both natural and social sciences.

At the higher secondary stage, that is, in classes XI and XII, they pursue many different academic streams drawn from languages, sciences, mathematics, social sciences, commerce, arts and physical education or vocational courses intended to help learners become skilful, [productive and efficient workers. It is important that the students further strengthen their knowledge and understanding of various aspects of environment and its problems and acquire attitudes and behaviours desirable for environmental improvement, safety management, and sustainable development.

By the time students enter class XI they will be mature enough to effectively participate in formulation, planning and implementation of projects and investigative studies pertaining to environmental problems.

In this course, the Environment is treated as an interconnected system of a variety of components including people, institutions, knowledge, artefacts, geosphere (atmosphere, hydrosphere, lithosphere), biosphere (ecosystems, biological populations), energy,

material, and information flows. An attempt has been made to illustrate the manifold environmental impacts that cascade through such interconnected systems and bring about continual processes of environmental change.

Std. XI

1. People and Environment

- 1.1 Humans as an integral part of the environment
- 1.2 Growth in human numbers over historical times
- 1.3 Migrations of people
- 1.4 Dispersion of human populations
- 1.5 Rural and urban settlements
- 1.6 Environment and health
- 1.7 Gender and environment

2. Institutions (Social, Economic, Political, Legal, Cultural) and Environment

- 2.1 Evolution of technology, social, economic and political organisation, and growing resource demands
- 2.2 Impact of economic growth on environment
- 2.3 Inequitable economic growth, poverty and environment
- 2.4 India as a country where many different modes of resource co-exist
- 2.5 Open access, community controlled, private and state management of resources
- 2.6 Evolution of environmental concerns in different societies over the course of history



- 2.7 India's manifold traditions of conservation and sustainable use
- 2.8 Shift of environmental regulation from nature worship, customary law to Wildlife Act, Forest Conservation Act, Environmental Impact Assessment and Biological Diversity Act, etc.
- 2.9 Tools of environmental management, efficiency of resource use, sustaining harvests, pollution control
- 2.10 Concept of sustainable development
- 2.11 Concept of sustainable consumption
- 2.12 Ecological footprints
- 2.13. International economic regimes, forces of globalisation
- 2.14 International regimes of environmental regulation, Framework Convention on Climate Change, Law of Sea, Trans-boundary Movement of Hazardous Wastes, etc.
- 3. Knowledge, Science, Technology and Environment**
- 3.1 Growth of knowledge and human colonisation of new environments
- 3.2 Growth of knowledge and use of newer resources
- 3.3 Growth of knowledge, control of diseases and population growth
- 3.4 Implications of intellectual property rights for environment
- 3.5 Biotechnology, agriculture, health and environment
- 3.6 Intellectual property rights over living organisms
- 3.7 Traditional indigenous knowledge, its implication for environment
- 4. Man-made Artefacts and Environment**
- 4.1 Technological advances and ever accelerating pace of manufacture of artefacts
- 4.2 Impact of agriculture, animal husbandry, aquaculture
- 4.3 Impact of agrochemicals on environment
- 4.4 Impact of industry, mining, transport
- 4.5 Generation and provision of energy, water and other natural resources
- 4.6 Impact of synthetic chemicals
- 4.7 Life cycle analysis of: Newspaper, household consumables, house construction, transport, personal computer, cell phones, etc.
- Std. XII**
- 1. Exosphere (Atmosphere, Hydrosphere, Lithosphere)**
- 1.1 Sustainable and non-sustainable use of renewable and non-renewable natural resources, such as water and minerals
- 1.2 Changing patterns of land use and land cover
- 1.3 Management of gaseous, solid, liquid and hazardous wastes
- 1.4 Air, water (fresh and marine), soil pollution – sources and consequences
- 1.5 Noise and radiation pollution – sources and consequences
- 1.6 Ozone layer depletion and its effect
- 1.7 Greenhouse effect; global warming and climatic change and its effects
- 1.8 Disasters - natural (earthquakes, droughts, floods, cyclones, landslides) and man-made (technological and industrial); their impact on the environment; prevention, control and mitigation
- 1.9 Strategies for reducing pollution and improving the environment



- 2. Biosphere (Ecosystems and Biological Population)**
- 2.1 Sustainable and non-sustainable use of biological populations
- 2.2 Sustainable agriculture
- 2.3 Impact of Genetically Modified Organisms
- 2.4 Deforestation, overgrazing, over fishing
- 2.5 Concept and value of biodiversity
- 2.6 Components of biodiversity – genes, species, and ecosystems
- 2.7 Landscape ecology
- 2.8 India as a mega diversity nation
- 2.9 Economic potential of biodiversity
- 2.10 Loss of biodiversity - threatened, endangered and extinct species
- 2.11 Strategies for conservation of biodiversity – *in situ* and *ex situ*
- 2.12 Mitigating the people-wildlife conflict
- 3. Energy, Material, Information Flows**
- 3.1 Changing global patterns of energy and water consumption - from ancient to modern times
- 3.2 Energy and water consumption and quality of life
- 3.3 Rising demand for energy, and water, gap between demand and supply (Indian context)
- 3.4 Conventional and non-conventional energy sources - potential (Indian context) and limitations of each source, methods of harnessing and environmental consequences of their use with special reference to Indian context
- 3.5 Energy conservation - efficiency in production, transportation and utilisation of energy
- 3.6 Planning and management of energy; future sources of energy - hydrogen, alcohol, fuel cells
- 3.7 Enhancing efficiency of devices and optimising energy utilisation
- 3.8 Modern Information Communication Technology Revolution and environment.



According to the Supreme Court directive dated December 2010, NCERT is the nodal agency for the subject Environment Education. The syllabus designed and finalized and prepared by NCERT for std. 11 & 12th has to be followed by the state after adapting it according to their local specific needs.

Maharashtra state has adapted the syllabus of Environment Education prepared by NCERT and taking into consideration the local specificity the education material is prepared accordingly.

Separate text books have been prepared for std. 11 & 12th. Local specific examples have been included so as to make the book student friendly. Various activities have been included to make the book and overall Environment Education activity based. Journal assignments are also included to make the assessment process easy for students and teachers as well.

An attempt has been made to make Environment Education interesting as far as possible and in accordance with the local needs and national needs as well.

