UNIT 5 : ENVIRONMENTAL EDUCATION PROGRAMMES FOR DIFFERENT LEVELS OF EDUCATION

UNIT STRUCTURE

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5.1 LEARNING OBJECTIVES

After going through this unit, you will be able to:

- describe about the environmental education at formal school stages
- identify the objectives of environmental education at primary school stage

- explain the importance of environmental education at primary school stage
- identify the objectives of environmental education at secondary school stage
- highlight the various aspects of environmental education at secondary school stage; and
- discuss how the higher education institutions contribute in imparting environmental education not only among the higher level students but also public at large.

5.2 INTRODUCTION

After going through the previous four units (I, II, III and IV) of this block you might be able to realise that environmental education is essential for all to protect our environment. You will also agree with the fact that the formal education system which includes primary, secondary and higher education provides the largest organised base for environmental education and action. In this regard, the National Policy on Education-1986 stresses that "There is a paramount need to create a consciousness of environment. It must permeate all ages and sections of the society, beginning with the child. Environment consciousness should confirm teaching in schools and colleges. This aspect will be integrated in the entire educational process." In this unit, we will discuss the objectives of imparting environmental education at different levels of education and also highlight the different environmental education programmes that may be incorporated in the curriculum of different stages of formal education.

5.3 FORMAL ENVIRONMENTAL EDUCATION IN SCHOOLS

The spectrum of Environmental Education has four major intergrading and interrelated components, i.e., awareness, real life situation, conservation and sustainable development. The brief description of these four components is as follows:

1. **Awareness** does mean to make the individual conscious about physical, biological, social and cultural aspects of environment. The environment is linked with the life support system which is itself has six components- air, land, water, flora, fauna and sun light. These components have dynamic relationship. Man being the most important organism has great responsibility to maintain this dynamic relationship among the components of life support system.
2. **Real-life situations** that link environment to life, these conditions are location specific, thus problems and priorities of each area are different.
3. **Conservation** means utilisation of natural resources not only by the present generation but also by the future generations.
4. **Sustainable development** means meeting the needs of the present keeping in view the needs of the future generations. Since all the resources are finite, so, the efforts are to be made to utilise the resources wisely and intelligently.

Environmental Education in the formal school curriculum has been influenced by two national policy documents: The National Curriculum Framework 2005 of the National Council of Educational Research and Training (NCERT) and the directive of the Supreme Court in response to a 1991 petition filed by Shri M C Mehta to make all curricula environment oriented in December 2010. The key document illuminating the way forward for EE in the formal school system, as approved by the Supreme Court, is the Affidavit filed by the NCERT and which advocates the infusion approach. This means that an environment perspective is to be added to all subjects, from Standard I to XII. The Supreme Court of India in December 2010 has conveyed its acceptance of the NCERT's Affidavit outlining the method of implementation of EE in India. On the basis of National Curriculum Framework 2005, NCERT suggests the following method of implementation of Environmental Education in schools:

Classes	Mode of Transaction
I and II	Through Activities
III and V	Environmental Studies (EVS)
VI to X	Infusion Model
XI to XII	Project based study

The National Council of Educational Training and Research (NCERT) has not only been developed textbooks and teacher guides incorporating environmental concerns for the last two decades, but also prepared guidelines for preparation of textbooks.

Considering the relevance of Environmental Education, as per National Curriculum Framework 2005 the new syllabi being proposed aim at generating among young learners an awareness of and sensitivity to the total environment in a holistic manner and the problems associated with it. It would also equip the future custodians of the earth with the requisite knowledge of the total environment, natural and social, the problems associated with it and the necessary skills for solving these in a positive and sustainable manner.

5.4 ENVIRONMENTAL EDUCATION FOR PRIMARY LEVEL EDUCATION

Primary education is the foundation stage of the total system of formal education. This level of education is the base of the total formal process of education. In primary stage or level students may be helped to acquire knowledge for the development of basic concept of their own environment. They may be helped to know in detailed manner about the basic components of the environment they live in and contents concerning to the three main components of the total surrounding, viz. land, air and water may be included in the curriculum. It may be made possible to learn about the relationship between life and the environment. Children may be given chance to know in detailed manner about their own environment, viz. family environment, environment of their own locality, social environment and the relationship of their own life with all such specific settings. They may be helped to know about the problems of population explosion and

pollution. Special steps may be taken to know thoroughly about the relationship between population and environment and the determinants of the standard of living. In primary level of education, all issues that have prime importance for the survival of life may be included in the curriculum so that students get the chance to realise the importance of their own environment.

At primary school stage the attempt is made to sensitize the child about environment. Emphasis should be mostly (75%) on building up awareness, followed by real life situation (20%) and conservation (5%). Teaching strategy includes audio-visual and field visits.

5.4.1 Objectives of Environmental Education at Primary Level Education

The National Curriculum Framework 2005 indicates the following objectives of teaching environmental education at primary level of education:

- To train children to locate and comprehend relationships between the natural, social and cultural environment;
- To develop an understanding based on observation and illustration, drawn from live experiences and physical, biological, social and cultural aspects of life rather than abstractions;
- To create cognitive capacity and resourcefulness to make the child curious about social phenomena, starting with the family and moving on to wider spaces;
- To nurture the curiosity and creativity of the child particularly in relation to the natural environment (including artifacts and people);
- To develop an awareness about environmental issues;
- To engage the child in exploratory and hands-on activities to acquire basic cognitive and psychomotor skills through observation, classification, inference, etc.
- To emphasise design and fabrication, estimation and

measurement as prelude to the development of technological and quantitative skills at later stages; and

- To be able to critically address gender concerns and issues of marginalisation and oppression with values of equality and justice, and respect for human dignity and rights.

5.4.2 Importance of Environmental Education at Primary Level Education

The primary education offers huge possibilities to find solution to environmental problems, as kids/children are very inquisitive for surrounding, they live in and if educated properly they will respect nature and behave in way that is appropriate from the viewpoint of protecting and improving the environment.

Early period of childhood is an extremely important phase in terms of laying the foundation for developing ethics. Today's children will be responsible for making decisions in future that will shape the health of the environment. To prepare them for such responsibilities, they need a sound environmental education as a foundation at childhood stage. The importance of imbibing environmental awareness at primary level is emphasised by the reason that for a significant proportion of population in primary education is terminal.

Besides, above discussed points, environmental education also fulfils some broader goals of education. Therefore fostering environmental education in children is essential as it –

- Expand their intellectual development and problem solving skills.
- Nourish sense of wonder, imagination and creativity.
- Enhance physical development.
- Nurtures sense of beauty, sense of belongingness, calm etc.

- It is right from childhood, the right attitudes towards environment will be nurtured in the young mind.
- No opportunity is lost to develop knowledge, understanding and concern for the environment through school.
- Help them to understand the interdependency or interrelationship of human being and environment.

Many of the decisions we take in our daily life affect the environment like, what product should we buy, which product is eco friendly, how to use the product. Children need to learn from their early stage of life that, environment influences their life style. Similarly, their life style influences the environment.



CHECK YOUR PROGRESS

Q 1: What percentage should be emphasised on building up awareness among children towards environment at primary level of education?

Q 2: Write two objectives of Environmental Education at Primary Level.

Q 3: Why is it important to teach environmental education at primary level?

Q 4: The spectrum of Environmental Education has four major interrelated components, i.e., ..., ..., ... and ..... (Fill in the blanks)

5.5 PROGRAMME OF ENVIRONMENTAL EDUCATION AT THE SECONDARY SCHOOL LEVEL IN INDIA

Secondary stage or level of education is an important stage for all students because in this stage students get the chance to acquire knowledge to make themselves better and responsible citizens. The future make-up of the young generation of society is known in this stage or level of education. This level of education is the bridge between the primary and higher education. Therefore, in this level all important issues relating to environment

may be included in the curriculum. From the lower secondary school stage onwards, there should be increased knowledge of real-life situations, conservation and sustainable development. At lower secondary level, objective of environmental education must be real-life experience, awareness and problem identification. The contents to be used are those used at Primary School level supplemented with general science. Teaching, practical and field visit are to be organised.

At the higher secondary school stage emphasis must be conservation, assimilation of knowledge, problems identification and action skills. The content used may be science-based and action oriented work. There should be proper teaching, practical and field work.

5.5.1 Objectives of Environmental Education at Secondary Level

- To emphasise the relevance of science to daily life.
- To develop a scientific attitude in student.
- To create an environment conducive to greater reliance on the use of principles and practices of science.
- To acquaint the student's with various natural phenomena.
- To develop an outlook which emphasises the method employed in different disciplines of science.

5.5.2 Aspects of Environmental Education Emphasised at Higher Secondary Level

- *Population :*growth, arises and problems of unplanned population.
- *Law :* Land use, land reclamation and land and soil conservation.
- *Resources:* resource uses, conservation, recycling.
- *Food and nutrition:* Food production, food adulteration and preservation, balance diet etc.
- *Conservation:* Causes of wildlife, plant, soil, water and

conservation of other non-renewable natural beauty.

- *Pollution:* Pollution of water, air and soil, noise pollution, pollution by insecticide and other chemicals and waste disposals.
- *Health and Hygiene:* Individual, family, country and social health and hygiene, health hazards etc.
- *Humans and Nature:* Other compounds of atmosphere, environmental quality and future on earth.

5.5.3 How to Make Environmental Education Effective at Secondary School Level In India

In order to make environmental education relevant and effective at secondary school level, the following steps need to be taken in incorporating environmental contents in the syllabus:

1. ***Reduce the number of concepts to be learnt:*** Let there be for every unit not more than 3 concepts to be learnt. This means that we consciously ensure the learning of these concepts and evaluate the extent of learning; at the same time not shutting the door to students who may want to learn more. If the methodology is interesting a child will learn beyond our expectation.
2. ***Make a clear distinction between concepts and facts that need to be learnt:*** Often these two are used in a mixed manner under the heading 'concepts'. By adding details which is pounce upon by textbook writers, may make teaching a difficult job for teachers.
3. ***Avoid repetition of topics and concepts:*** Class VI and VII Environmental Education syllabus has similar concepts on air, water and soil that continue to dominate at various other levels too. Similarly class VIII & IX have an overdose of ecosystems which start as forests etc in classes VII & VIII. These are topics that are also learnt in science and geography and taken together would rapidly lead to boredom for students.
4. ***Change the format of the presentation and details of the***

curriculum and make it more explicit in what is expected as; learning outcomes: Rather than suggesting activities, suggest clearly the learning outcomes. A list of vocabulary, skills that need to be mastered at each level is what the curriculum should have. The activities, examples should be left to the teacher to decide based on what is available in the students' environment.

5. ***Let there be greater involvement of teachers in curriculum design:*** Evolve a decentralised programme for curriculum design process. It is high time that more teachers across the country are included in the curriculum design process. It is high time that more teachers across the country are included in the curriculum formulation process. Teachers have a clear idea of the time required, appropriateness of content and extent of age-related abilities of children. Their inputs should be given greater preference than those who are associated with higher institutions of learning or are administrators in the various departments of education.

6. ***Alter the number of subjects studied at each class:*** Merely changing topics would perhaps be the first step. Accompanying this could also be a change in the subjects learnt at each class. Environmental education could replace science and social studies at some levels.



CHECK YOUR PROGRESS

Q 5: What should be the emphasis of teaching environmental education at higher secondary stage?

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Q 6: Write two objectives of environmental education at secondary stage of education.

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Q 7: Write two aspects of Environmental Education that are emphasised at Higher Secondary Level.

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Q 8: Write any two steps to make Environmental Education effective at Secondary School Level In India.

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5.6 PROGRAMME OF ENVIRONMENTAL EDUCATION AT THE HIGHER EDUCATIONAL INSTITUTES

Higher Educational institutes are involved in the promotion of information and in creating social attitudes that influence the normal life. Higher education includes universities and colleges, research and training centres, novel groups, employers, student organisations, quality, declaration organisations, governmental and executive organisations. These institutes connect the regions; go beyond disciplinary limits and with local and international scope of progress. They are vital in producing leaders and in creating history. Supreme Court is its judgement has made learning of the subject of environmental issues mandatory at the undergraduate level (1991). University Grants Commission has directed all affiliated institutions to compulsorily teach the subject for all the branches of engineering (2004). The Hon'ble Supreme Court directed the UGC to commence a foundation course at each stage of college education on environment. Consequently, UGC has implemented a six months compulsory course in environmental studies and made it mandatory in all the university colleges of India. UGC appointed an experts committee to look into the relevant questions and issues. Later a core module syllabus for environmental studies for undergraduate courses was prepared for all the branches of higher education. Higher Education Programmes over the years have made significant efforts to broaden the scope of environmental education to college students so

that they can become responsible citizens, teachers, policy-makers and influential group.

At the global level Talloires Declaration in 1990 invited twenty-two university leaders in Talloires, France, to vent out their distress about the prevailing environmental conditions and the role of universities in creating sustainable environment. This declaration highlighted the challenges and focused on the dearth of environmentalists, and lack of understanding among academia on the impact of environment on public health and stressed on the role of the universities. Talloires Declaration advocated an increasing acknowledgment of the problems of environment through education, research, instruction and service.

The higher educational institutions help the students to understand the basis of environmental degradation and inspire the students to search for sustainable practices for the benefit of the environment. These institutions also teach the factors leading to inequality in association with representation of integrity and humanitarian attitudes. The college or university properly includes the thoughts of environmental issues in all subjects and in professional education as well as into teaching and student research. The topics like globalization and sustainable growth, environmental values, environmental scripts, territorial principles and sustainable farming, urban ecosystem, social justice, population, women and development, sustainable manufacture and expenditure; and so on are included in several courses.

The Universities must focus on the development of curriculum and resources, research and development courses, trainings, IEC and Community Advocacy Programme and improvement of amenities and instruments. The higher educational institutes should improve mass-based action towards the protection and improvement of the environment, increase environmental manpower needed for the next century, training, curriculum development, research and development, information education, advocacy and policy reforms. The Universities should focus more on supporting research, community outreach work related to environmental projects/ activities and shared work on environmental related issues with industry, and professional organisations.

The focus of universities should be on training teachers on environmental education while emphasising on preparing materials for formal and non-formal schools on environmental education and in incorporating environmental courses in the General Education curriculum of higher education and preparing compendium of lessons on environment for higher education. The universities have to concentrate on networking and partnership between tertiary educational institutions of environmental security and organisation. Higher educational institutions should put efforts on promotion.



CHECK YOUR PROGRESS

Q 9: Talloires Declaration was made in .....
(Fill in the blanks).

Q 10: Who has directed to introduce environmental studies compulsorily in all the branches of engineering courses?

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Q 11: Write any one programme offered by several universities on postgraduate education on environment.

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5.7 LET US SUM UP

- Environmental education programmes are essential to engage the people sustainability through education and lifelong learning. It is meant to ensure that people have the information and skills to lead an ecologically balanced life and a sustainable community.
- Considering the relevance of Environmental Education, as per National Curriculum Framework 2005 the new syllabi being proposed aim at generating among young learners an awareness of and sensitivity to the total environment in a holistic manner and the

problems associated with it. It would also equip the future custodians of the earth with the requisite knowledge of the total environment, natural and social, the problems associated with it and the necessary skills for solving these in a positive and sustainable manner.

- Primary education is the foundation stage of the total system of formal education. This level of education is the base of the total formal process of education. In primary stage or level students may be helped to acquire knowledge for the development of basic concept of their own environment. They may be helped to know in detailed manner about the basic components of the environment they live in and contents concerning to the three main components of the total surrounding, viz. land, air and water may be included in the curriculum. It may be made possible to learn about the relationship between life and the environment.
- Environmental education should start with the every experience of students in their local environment i.e. school, home etc. Schools are required to take some initiative which develops some ethics or values in students in informal way without any compulsions, specifically within primary school.
- At primary school stage the attempt is made to sensitize the child about environment. Emphasis should be mostly (75%) on building up awareness, followed by real life situation (20%) and conservation (5%). Teaching strategy includes audio-visual and field visits.
- From the lower secondary school stage onwards, there should be increased knowledge of real-life situations, conservation and sustainable development. At lower secondary level, objective of environmental education must be real-life experience, awareness and problem identification. The contents to be used are those used at Primary School level supplemented with general science. Teaching, practical and field visit are to be organised.
- At the higher secondary school stage emphasis must be conservation, assimilation of knowledge, problems identification and action skills. The content used may be science-based and action

oriented work. There should be proper teaching, practical and field work.

- The focus of universities should be on training teachers on environmental education while emphasising on preparing materials for formal and non-formal schools on environmental education and in incorporating environmental courses in the General Education curriculum of higher education and preparing compendium of lessons on environment for higher education.



5.8 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: At primary school stage the attempt should be made to build awareness among the child about environment and in this regard, emphasis should be given seventy five percent out of the total activities of environmental education.

Ans to Q No 2: Two objectives of Environmental Education at the primary level are as follows:

a) To train children to locate and comprehend relationships between the natural, social and cultural environment;

b) To develop an understanding based on observation and illustration, drawn from lived experiences and physical, biological, social and cultural aspects of life rather than abstractions;

Ans to Q No 3: The primary education offers huge possibilities to find solution to environmental problems, as kids/children are very inquisitive for surrounding, they live in and if educated properly they will respect nature and behave in way that is appropriate from the viewpoint of protecting and improving the environment.

Ans to Q No 4: The spectrum of Environmental Education has four major interrelated components, i.e., awareness, real life situation, conservation and sustainable development.

Ans to Q No 5: At the higher secondary school stage emphasis must be conservation, assimilation of knowledge, problems identification and

action skills. The content used may be science-based and action oriented work. There should be proper teaching, practical and field work.

Ans to Q No 6: The two objectives of Environmental Education at the secondary level are as follows:

a) To emphasise the relevance of science to daily life.

b) To create an environment conducive to greater reliance on the use of principles and practices of science.

Ans to Q No 7: Two aspects of Environmental Education that should be emphasised at higher secondary level are as below:

a) Population :growth, arises and problems of unplanned population.

b) Law : Land use, land reclamation and land and soil conservation.

Ans to Q No 8: In order to make environmental education effective at secondary school level, the following steps need to be taken in incorporating environmental contents in the syllabus:

a) Reduce the number of concepts to be learnt: Let there be for every unit not more than 3 concepts to be learnt. This means that we consciously ensure the learning of these concepts and evaluate the extent of learning; at the same time not shutting the door to students who may want to learn more. If the methodology is interesting a child will learn beyond our expectation.

b) Make a clear distinction between concepts and facts that need to be learnt: Often these two are used in a mixed manner under the heading 'concepts'. By adding details which is pounce upon by textbook writers, may make teaching a difficult job for teachers.

Ans to Q No 9: 1990.

Ans to Q No 10: University Grant Commission in the year 2004.

Ans to Q No 11: Environmental planning & resource development.



5.9 MODEL QUESTIONS

A) Very Short Questions (Answer each questions in about 50 words)

Q 1: Define sustainable development.

Q 2: What should be the mode of transaction in teaching environmental education at primary level?

Q 3: What is the full form of UGC.

Q 4: Where was the Talloires Declaration held?

B) Short Questions (Answer each questions in about 150 words)

Q 1: Write four objectives of Environmental Education Programme at primary level.

Q 2: Why is Environmental Education needed at Primary Level?

Q 3: Write the methods suggested by NCERT regarding implementation of Environmental Education at different classes of school education.

Q 4: Write four aspects of Environmental Education emphasised at Higher Secondary Level.

Q 5: What role does UGC play in introducing environmental education at higher education institutes?

C) Long Questions (Answer each questions in about 300-500 words)

Q 1: Discuss about the formal Environmental Education Programmes at School Level.

Q 2: How Environmental Education at Primary level can be implemented.

Q 3: Discuss how Environmental Education can be made effective at Secondary School level in India.

Q 4: Discuss about the programme of Environmental Education at the Higher Educational Institutes.

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