

NATIONAL BIORESOURCE DEVELOPMENT BOARD

Course–curriculum for Vacation Training Programme on Bioresources for School Children

Target Group: Students who have appeared for the Class X Examination

Duration of the Course: 3-4 weeks

Aims of the course:

- a) To inculcate among students an appreciation of the biological resources of the country, their use and management.
- b) To create opportunities for hands-on experiences in the field.
- c) To understand locally available bioresources, their sustainable use and conservation.
- d) To interact with leading experts in the field including core and visiting faculty at the organization.

Course Content:

A Introduction to Biodiversity and Bioresources

- Biodiversity and Bioresources-their importance.
- Genetic diversity, species diversity, and Ecosystems diversity.
- Distribution of terrestrial and aquatic bioresources, Microbial bioresources.
- Value of Bioresources – direct and indirect values, Ethical values.
- Natural and wild resources-Medicinal plants, economically/industrially useful plants and animals, parasites & predators.
- Ecologically relevant resources-Keystone species, pollinators, natural predators
- Bioresources maintained by and in man made ecosystems. Genetic resources, agrobiodiversity,
- Ethnic knowledge bases, folklore knowledge bases.
- Threats to bioresources
- Conservation and sustainable use of bio-resources.
- Intellectual Property Rights and bioresources.
- Biotechnology and Bioresources-scope, limits & precautions
- Emerging avenues and careers in the fields of Biodiversity, Bioresources and Biotechnology.

(The above topics should not involve a series of conventional lectures. Instead they will be in the form of ‘Meet the Scientist’ sessions where an invited expert will introduce the subject followed by an interactive session

with students, and wherever possible provide laboratory work and field observations.)

B. Exploring the Environment and understanding local Bioresources

(Practical hands-on activities)

- Field work for studying and documenting local biodiversity / bioresources
- Discussion sessions based on the study involving local elders to compare past and present distribution of species, and to find out factors responsible for the decline of biodiversity.
- Study of Agricultural biodiversity through visits to farms and meetings with farmer communities.
- Study of Forest / Wetland / Arid zone Marine biodiversity bioresources (depending on the location) through field visits/Nature camps.
- Visits to Institutions of relevance.

C Interactive Sessions

- Presentation on specific topics by each student followed by discussions.
- Quiz programme organized by students.
- Painting / Poster making session on Conservation of Bioresources and sustainable life styles.
- Web-page designing on bioresources.
- Play / Skit put up by students on a relevant theme.
- A.V. Film presentations.

D Individual Projects by students

Each student will work on a specific project assignment which involves field studies, library research and data collection and analysis and identification of school / community based activity to be followed up at his/her place of origin.

E Wrap-up Session

- Experience sharing
- Presentation by students followed by allocation / adoption of follow-up projects,
- Get together with invited guests.
- Award of Certificates.

Follow-up Action

Follow up of activities identified at the School/Community involving local participants. Relevant institutions/ Govt. agencies / NGOs could be identified and requested to accept becoming “host” agencies for a selected subject area. They would be expected to facilitate the activities of the students during the project work. For example, ICAR could agree to host agriculture-related projects, NGOs like Navdanya in Delhi could aid students working on

food security / genetic interventions; other such agencies could include MSSRF, SACON, DBT local university faculties in biodiversity related subjects, NGOs etc. Report of the result / findings based on these activities to be submitted to the Institution (where the training was concluded) after 6 months. DBT will need to evolve some scheme whereby such project result / findings can be collated and put to productive use.

NOTE: This vacation training programme for School children at Class X + level is an enrichment course to create awareness on bioresources and biodiversity conservation. Though this is not directly related to their School curriculum and examinations, the programme has some relevance to the course content at the level of Class X and XI. Highlighting this aspect would encourage students to opt for this training programme and teachers and parents to support them to do so.

The course contents proposed for this training programme have relevance to the following topics in the Science text book in Class X and Biology text book in Class XI.

Class X (Science)

- Biomass as fuel
- Agricultural tasks and food production
- Food from Animals.
- Animal husbandry
- Fish as source of animal food.
- Management of food resources.
- Biosphere – structure and function
- Food Chain

Class XI (Biology)

- Diversity of life
- Organisms and the Environment
- Natural resources and their utilization
- Wildlife and Forest Conservation