

OPPORTUNITIES TO INCLUDE ECOLOGICAL EDUCATION IN THE CONTENT OF BIOLOGICAL SCIENCE

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ANNOTATION

This article presents opinions and considerations on how to implement environmental education while teaching biology. The possibilities of forming ecological education and ecological culture in various sections of biology are analyzed.

Keywords: ecology, environmental education, approach to nature, technological development, environmental factors, plant world, animal world.

Despite the high level of technological development, humanity will always remain dependent on the surrounding wildlife, flora and fauna. A real, effective tool for encouraging love for nature, its protection, solving environmental problems of local importance, organizing research and implementing ecological projects of social importance, environmental education and educating schoolchildren, forming their new ecological thinking, is considered. The urgency of the problem of education of schoolchildren's ecological culture never loses its importance.

The educational system for ecological education and upbringing has the main tasks of increasing ecological literacy, forming ecological culture, developing ecological thinking, forming healthy and ecologically correct lifestyle skills, and providing insights into the meaning and importance of the "Sustainable Development Concept".

Ecological education is a set of theoretical knowledge and practical skills, such as caring and careful treatment of all living creatures on Earth, forming an understanding of the value of nature, preparing for the rational use of natural resources, and participating in the preservation and protection of natural resources. The main goal of ecological education is to form the ecological culture of individuals and society. Ecological culture is the most important part of the general culture, and it is a special quality of a person that leads to awareness of the important values of life and nature and to be active in their preservation.

The formation of environmental literacy among students leads to the reduction of various factors related to the violation of natural balance through the establishment of community control, it gives hope that the environmental situation will change for the better. Biology occupies a special place in environmental education, because all forms of life on our planet are studied in biology classes. The teacher should direct students to the formation of knowledge about the interaction of man with nature and ecological values, skills and abilities to study nature and protect it.

In the modern world, as the conflicts in the interaction between society and nature become more and more intense, environmental education becomes an urgent necessity. Today, it is difficult to find a person who does not care about the future of our planet. One of the reasons for the development of events at this level and the ecological crisis is the forgetting of historical and scientific traditions of peoples and the inability to foresee the consequences of human intervention in natural processes.

As a result of ecological education, schoolchildren develop not only a careful attitude towards nature, but also personal qualities such as self-control, a critical attitude towards themselves and others, and the ability to foresee the consequences of their actions in the near and far future. Formation of a responsible attitude to the environment among schoolchildren, readiness for a rational relationship with

nature, calculation with the laws of nature, acquisition of skills related to making and implementing decisions related to them, preservation of nature for future generations is the main education. It is intended to be defined as lim goals.

Environmental education is a complex and long-term process. It is necessary to inculcate the content of science from the beginning.

At the beginning of the teaching of the science of biology, concepts are given about bacteria and fungi, the vital manifestations of living things, the importance of these organisms in nature and human life, their role in soil formation, biochemical processes, and the circulation of substances in nature, and their interaction with other members of the ecosystem are discussed. complex system is explained.

In the process of introducing students to plants in the 6th grade, schoolchildren enrich the air with oxygen, reduce the concentration of carbon dioxide in it, remove dust, moisten the air, soften the temperature in hot weather, absorb noise, and people get food, clothes, building materials, and aesthetic pleasure. , will gain knowledge about the importance of plants in keeping nature in balance. Special attention should be paid to rare and endangered species and the reasons for their decline. The relationship between the structural features of plants and the environment is established, their relationship with other ecological groups is analyzed.

In the 7th grade, students learn about the complex interaction of animals with each other, plants, fungi, bacteria and the inanimate nature that surrounds them in the process of getting to know the animal world. It is a single complex ecological system. Questions about the migration of animals and the reasons for their decline will be considered. Special attention is paid to rare and protected species. Possible interactions between animals and humans are explored.

In the 8th grade, in the study of the section "Man and his health", attention is paid to the dependence of human health on the environment in society and nature, the need for flora and fauna, both as a place of residence and as resources.

In the formation of ecological culture, the general biology section of the school biology course is of particular importance and is related to the study of the biogeocenosis and biosphere level of life. In the 9th grade, all the above methods and various types of training are used to study the basics of general biology. In addition to general theoretical education, the formation of students' outlook on natural sciences, the harmonization of human interactions with the environment, including society, and the formation of civil responsibility of each person as a biological species for the future of mankind (in the study of topics related to genetics, genetics, evolution and ecology) special attention is paid. It is said that the main idea of health care is "the health of each person - the health of the nation, the health of the whole species."

In grades 10-11, the study of general biological sections continues. As the knowledge acquired in the 9th grade is expanded and deepened, students understand the harmonious importance of nature, its mechanism of action, and understand how easily existing natural relations can be broken.

With a correct understanding of the operation of anthropogenic factors, a realistic assessment of modern environmental problems is formed, and to find the right direction for the rational use of natural resources, the acquired knowledge and skills allow schoolchildren to understand the possibility of managing the processes occurring in wild nature in accordance with the environment, the value of life, its helps to create awareness about the importance of diversity for nature and humanity. Although there are not many topics related to environmental education in the program of the 10th grade, when studying ontogenesis (the influence of the environment on the development of the organism), understanding the variability and causes of mutations (the role of environmental conditions in the development and manifestation of characteristics), the relevance to the concepts of ecology is evident. will be.

The 11th grade program covers the relationship between the organism and the environment, the basics of ecology, and human impact on the biosphere. Topics of design works related to control of environmental pollution in the place of residence, creation of environmental passport of the school, creation of map of sources of pollution of the place of residence are proposed.

Tasks, exercises and tasks with elements of research, with incomplete information, with controls and modeling elements are offered to check the level of students' knowledge of ecology.

Ecologically-oriented training should include ecological factors in all pedagogical goals set for the lesson, educational goal (functioning as an element of the content of ecological knowledge), developmental goal (formation of students' preparation skills for using acquired knowledge in solving environmental problems), educational goals (involve students in nature conservation activities do) must answer.

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