

## Biology

Year 7

(70 hrs – 2 hrs per week, of them reserve – 6 hrs)

Table of contents	
1.	<p><b>Introduction</b> Main differences between the plants and the mushrooms. Peculiarities of animal nutrition. Biological structure of animals: cells, tissues, organs, and organ systems.</p> <p><b>Demonstration:</b> stuffed animals, wet preparations, image collections (including electronic) of animals.</p>
2.	<p><b>Diversity of fauna</b> Means of classifying animals (by the living environment, means of movement, way of living, etc.). Coelenterata. Annelids. Anthropods: crustaceans, arachnids, and insects. Molluscs. Parasitic invertebrates. Fish. Amphibia. Reptilia. Birds. Mammals.</p> <p><b>Demonstration</b> microslide, wet preparations, collections, stuffed animals, images (including electronic ones) of animals</p> <p><b>Laboratory test:</b> outlook and movement of annelids (using earthworm or sludge worm as an example); structure of a shell of gastropods and bivalve molluscs.</p> <p><b>Practical work:</b></p> <ol style="list-style-type: none"> <li>1. Revealing the examples of adaptation to the way of life in insects.</li> <li>2. Revealing the examples of adaptation to the way of life in representatives of various ecological groups of birds.</li> <li>3. Defining the peculiarities of the outlook of invertebrates as adaptations to different life conditions.</li> </ol>
3.	<p><b>Animal vital processes</b> Nutrition and digestion. Specific features of metabolism of a heterotrophic organism. Diversity of digestion systems. Breathing and gas exchange of animals. Breathing organs and their diversity. Meaning of breathing processes. Substance transport of animals. Open and closed blood-vascular system. Blood, its main functions. Secretion and its meaning for the organism. Secretion bodies of animals. Support and movement. Types of skeleton. Meaning of locomotive system. Two types of symmetry as the reflection of a way of life. Ways of movement of animals.</p>

	<p>Body covers of animals: diversity and functions. Sense organs and their meaning. Nervous system, its meaning, and development in different animals. Reproduction and its meaning. Forms of reproduction in animals. Sex cells and impregnation. Development of animals (with and without transformation). Periods and duration of animal life.</p> <p><b>Laboratory test:</b> specific features of animal body covers; defining the age of animals (using bivalve molluscs and bony fishes as an example).</p> <p><b>Practical work:</b> 4. Comparison of the structure of blood-vascular system of vertebrates. 5. Comparison of skeleton structure of vertebrates. 6. Comparison of brain structure of vertebrates (using mockups/models).</p>
4.	<p><b>Animal behavior</b> Animal behavior and methods of studying it. Innate and acquired behavior. Ways of orientation of animals. Homing. Animal migration. Forms of animal behavior: research, nutrition, protective, hygienic, and reproductive (search of partners, parent behavior and care of the litter), territorial, and social. Types of groups according to K. Lorenz. Group hierarchy. Animal communication. Using the instruments of labor by animals. Elementary cognitive activity. Animal behavior evolution and its adaptation meaning.</p> <p><b>Laboratory test:</b> observation of animal behavior (the species is defined by the teacher).</p> <p><b>Practical work:</b> 8. Defining the forms of behavior (or types of groups) of animals (using video materials or description).</p>
5.	<p><b>Organisms and habitat.</b> Concept of an ecosystem and environmental factors. Nutrition chains. Circulation of substances and energy flow in the ecosystem. Cohabitation of organisms in groups. Impact of people and their activities on the ecosystems. Ecological ethics. Nature preservation territories. Red Book of Ukraine.</p>
<p><b>Expected results</b></p> <p>Pupil:</p>	

## Educational programs in use for teaching Ukrainian children



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- **can name:** the indicators of the main groups of organisms (plants, animals, mushrooms, and bacteria); representatives of the main groups of organisms from pictures, photos, and text description;
- **Compares:** the structure and processes of vital working of the main groups of organisms (plants, animals, mushrooms, and bacteria);
- **concludes on:** the unity of living creatures.