

BIODIVERSITY JUNIOR

Life is really surprising, and what makes it even more incredible is the infinite variety of forms in which it appears: there are gigantic animals like the whales and living creatures that are so small that they can only be seen with a microscope. Life has invaded our planet, reaching the farthest corners of the Earth and adapting to the most diverse situations. There are creatures that can live in the ice-cold polar regions, others that live in the arid deserts, fish that live in the deep abysses and living organisms that can live in environments that would be mortal for many others. This richness of forms of life is called biodiversity. In a mountain forest, for example, you may find 22 different species of trees, 258 species of insects, 75 species of birds, 34 species of mammals and 112 flowers! Each species has an indispensable function in nature, even the smallest creature; for this reason it is very important to protect this balance. Biodiversity is the “insurance” for life on our Planet. In fact, biodiversity provides food, harvests, cattle and fish. Just think that approximately one third of the food that we eat comes from plants that have been pollinated by over 100,000 different species of bees, flies, butterflies, beetles and birds! Biodiversity is of fundamental importance also in medicine. In fact, a large number of species of plants are used for medicinal purposes, since very ancient times. An example is quinine, extracted from the Cinchona (Quina) tree, that is used to fight malaria. Also, many industrial products are obtained due to biodiversity: lubricants, perfumes, paper, waxes, rubber are all derived from plants, and also products of animal origin such as wool, silk, leather, skins, etc.

Biodiversity can be subdivided into three different levels, from the most microscopic to the most evident, as follows:

- **Genetic diversity:** genetic diversity refers to different characteristics within a species, for example the colour of the eyes and fur of a cat.
- **Species diversity:** it is the variety of species that can be found in a particular environment, such as the different plant species and animal species that can be found in a forest. Some areas of the Planet have greater richness of species than others, at the Equator for example there is the highest number of species, that decreases towards the Poles. In the ocean there are many more different species near the coasts than in the abysses.
- **Ecosystem diversity:** it is the difference in the different environments on the Earth, for example the desert, the tropical forest, the coral reef, the woods in the mountains, etc.