

## Biology 1

- Learn what biology is and the scientific method. Also, learn about biologist tools and technology.
- Learn about the chemistry of life: atoms, ions, molecules, properties of water, carbon based molecules, chemical reactions, and enzymes.
- Learn about cells, the cell theory, difference between prokaryotic and eukaryotic cells, function of cell organelles, and the difference between passive and active transport.
- Learn about cells and energy: photosynthesis and cellular respiration.
- Learn cell growth and division and the regulation of the cell cycle.
- Learn about chromosomes and steps of meiosis.
- Learn the basic of genetics: phenotype vs. genotype, complex patterns of inheritance, gene linkage and mapping, and human genetics and pedigrees.
- Learn all about DNA and proteins which includes: structure of DNA, DNA replication, translation, gene expression and regulation, and mutations.
- Learn about biotechnology: how to manipulate DNA, copying DNA, DNA fingerprinting, and genetic engineering.
- Learn about principle of ecology: biotic vs. abiotic factors, food chains and food webs, and the cycle of matter.
- Learn interaction in ecosystem: habitat vs. niche, community interaction, and population density and distribution
- Learn about the biosphere, climate, and biomes.
- Learn how organisms are classified and how to write scientific names.
- Learn how to differentiate between animals in different kingdoms and domains.
- Learn the structure and diseases of viruses and bacteria.
- Learn the diversity of protist and fungi.
- Learn plant life cycle, classification of plants, and the diversity of flowering plants.
- Learn about diversity animals and their characteristics.
- Learn about vertebrate diversity including: fish, amphibians, and vertebrates on land.
- Take a closer look at amniotes including: reptiles, birds, and mammals.