

Modern Biology Study Guide

Classification

The theory describes five major biological processes, namely metabolism, temperature regulation, information processing, embryogenesis, and inheritance. Each was defined in some detail, in some cases sufficient to enable modern biologists to create mathematical models of the mechanisms described. Aristotle's method, too, resembled the... 7689ff6421

Taxonomy (biology) Organisms are grouped into taxa (singular: taxon), and these groups are given a taxonomic rank; groups of a given rank can be aggregated to form a more inclusive group of higher rank, thus creating a taxonomic hierarchy. In biology, taxonomy (from Ancient Greek τάξις (taxis) 'arrangement' and -νομία (-nomia) 'method') is the scientific study of naming, defining (circumscribing) In biology, taxonomy (from Ancient Greek τάξις (taxis) 'arrangement' and -νομία (-nomia) 'method') is the scientific study of naming, defining (circumscribing) and classifying groups of biological organisms based on shared characteristics. The Swedish botanist Carl Linnaeus is regarded as the founder of the current system of taxonomy, having developed a ranked system known as Linnaean taxonomy for categorizing organisms. The principal ranks in modern use are domain, kingdom, phylum (division is sometimes used in botany in place of phylum), class, order, family, genus, and species 7689ff6421

Traditionally, textbooks from Canada and the United States have used a system of six kingdoms (Animalia, Plantae, Fungi, Protista, Archaea/Archaeobacteria, and Bacteria or Eubacteria), while textbooks in other parts of the world, such as Bangladesh, Brazil, Greece, India, Pakistan, Spain, and the United Kingdom have used five kingdoms (Animalia, Plantae, Fungi, Protista and Monera). 7689ff6421

Aristotle's biology Aristotle's biology is the theory of biology, grounded in systematic observation and collection of data, mainly zoological, embodied in Aristotle's books Aristotle's biology is the theory of biology, grounded in systematic observation and collection of data, mainly zoological, embodied in Aristotle's books on the science. Many of his observations were made during his stay on the island of Lesbos, including especially his

descriptions of the marine biology of the Pyrrha lagoon, now the Gulf of Kalloni. His theory is based on his concept of form, which derives from but is markedly unlike Plato's theory of Forms 7689ff6421

In biology, evolution is change in the heritable characteristics of biological organisms over generations due to natural selection, mutation, gene flow, and genetic drift. Also known as descent with modification. Over time these evolutionary processes lead to formation of new species (speciation), changes within lineages (anagenesis), and loss of species (extinction). "Evolution" is also another name for evolutionary biology, the subfield of biology concerned with studying evolutionary processes that produced the diversity of life on Earth. 7689ff6421

Zoology Its studies include the structure, embryology, classification, habits, and distribution of all animals, both living and extinct, and how they interact with their ecosystems. Its studies include the structure, embryology, classification, habits, and distribution of all animals Zoology (zoh-OL-ə-jee, UK also zoo-) is the scientific study of animals. also /zu'-/ zoo-) is the scientific study of animals. Zoology is one of the primary branches of biology. The term is derived from Ancient Greek ζῷον, zōion ('animal'), and λόγος, logos ('knowledge', 'study') 7689ff6421

Most stars are currently classified under the Morgan-Keenan (MK... 7689ff6421

Kingdom (biology) Some recent classifications based on modern cladistics have explicitly abandoned the term kingdom, noting In biology, a kingdom is the second highest taxonomic rank, just below domain. (Animalia, Plantae, Fungi, Protista and Monera). Kingdoms are divided into smaller groups called phyla (singular phylum) 7689ff6421

Outline of evolution following outline is provided as an overview of and topical guide to evolution: In biology, evolution is change in the heritable characteristics of biological The following outline is provided as an overview of and topical guide to evolution: 7689ff6421

Outline of academic disciplines Complete JACS (Joint Academic Classification of Subjects) from Higher Education An academic discipline or field of study is a branch of study, taught and researched as part of higher education. A scholar's discipline is commonly defined by the university faculties and learned societies to which they belong and the academic journals in which they publish research. assessment, and reporting of fields of study and

program completions activity 7689ff6421

Family (biology) A family may be divided into subfamilies, which are intermediate ranks between the ranks of family and genus. families List of families of spiders "Taxonomy Definition, Classification & Example". 19 March 2017. The official family names are Latin in origin; however, popular names are often used: for example, walnut trees and hickory trees belong to the family Juglandaceae, but that family is commonly referred to as the "walnut family". It is classified between order and genus. Retrieved 10 October 2022. : familiae) is one of the eight major hierarchical taxonomic ranks in Linnaean taxonomy. Barnhart - Family (Latin: familia, pl. Biology Dictionary 7689ff6421

Although humans have always been interested in the natural history of the animals they saw around them, and used this knowledge to domesticate certain species, the formal study of zoology can be said to have originated with Aristotle. He viewed animals as living organisms, studied their structure and development, and considered their adaptations to their surroundings and the function of their parts... 7689ff6421

Ornithology It has also been an area with a large contribution made by amateurs in terms of time, resources, and financial support. Most biologists who recognise themselves as "ornithologists" study specific biology research areas, such as anatomy, physiology, taxonomy (phylogenetics) Ornithology, from Ancient Greek ὄρνις (órnīs), meaning "bird", and -logy from λόγος (lógos), meaning "study", is a branch of zoology dedicated to the study of birds. Studies on birds have helped develop key concepts in biology including evolution, behaviour and ecology such as the definition of species, the process of speciation, instinct, learning, ecological niches, guilds, insular biogeography, phylogeography, and conservation. made. Several aspects of ornithology differ from related disciplines, due partly to the high visibility and the aesthetic appeal of birds 7689ff6421

Some recent classifications based on modern cladistics have explicitly abandoned the term kingdom, noting that some traditional kingdoms are not monophyletic, meaning that they do not consist of all the descendants of a common ancestor. The terms flora (for plants... 7689ff6421 Disciplines vary between well-established ones in almost all universities with well-defined rosters of journals and conferences and nascent ones supported by only a few universities and publications. A discipline may have branches, which are often called sub-disciplines. 7689ff6421 The following outline provides an overview of and topical guide to academic disciplines. In each case, an entry at the

highest level of the hierarchy (e.g., Humanities) is a group of broadly similar disciplines; an entry at the next highest level... 7689ff6421

History of biology Although the concept of biology as a single coherent field arose in the 19th century, the biological sciences emerged from traditions of medicine and natural history reaching back to Ayurveda, ancient Egyptian medicine and the works of Aristotle, Theophrastus and Galen in the ancient Greco-Roman world. Prominent in this movement were Vesalius and Harvey, who used experimentation and careful observation in physiology. Although the concept of biology as a single coherent field arose The history of biology traces the study of the living world from ancient to modern times. The history of biology traces the study of the living world from ancient to modern times. During the European Renaissance and early modern period, biological thought was revolutionized in Europe by a renewed interest in empiricism and the discovery of many novel organisms. This ancient work was further developed in the Middle Ages by Muslim physicians and scholars such as Avicenna 7689ff6421

The delineation of what constitutes a family—or whether a described family should be acknowledged—is established and decided upon by active taxonomists. There are not strict regulations for outlining or acknowledging a family, yet in the realm of plants, these classifications often rely on both the vegetative... 7689ff6421

Stellar classification The strengths of the different spectral lines vary mainly due to the temperature of the photosphere, although in some cases there are true abundance differences. Each line indicates a particular chemical element or molecule, with the line strength indicating the abundance of that element. Each star is assigned a spectral class In astronomy, stellar classification is the classification of stars based on their spectral characteristics. grey/black to a nearby observer. Electromagnetic radiation from the star is analyzed by splitting it with a prism or diffraction grating into a spectrum exhibiting the rainbow of colors interspersed with spectral lines. The modern classification system is known as the Morgan–Keenan (MK) classification. The spectral class of a star is a short code primarily summarizing the ionization state, giving an objective measure of the photosphere's temperature 7689ff6421

While early ornithology was principally concerned with descriptions and distributions of species, ornithologists... 7689ff6421

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