

Duke Trip / Alabama Course of Study Standard Correlations

Kindergarten

- #6 Compare size, shape, structure, and basic needs of living things.
- Identifying similarities of offspring and their parents.

1st Grade

- #4 Describe survival traits of living things, including color, shape, size, texture, and covering.
- Classifying plants and animals according to physical traits.
 - Identifying developmental stages of plants and animals.
 - Describing a variety of habitats and natural homes of animals.

2nd Grade

- #6 Identify characteristics of animals, including behavior, size, and body covering.
- Comparing existing animals to extinct animals.
 - Identifying migration and hibernation as survival strategies.

3rd Grade

- #8 Identify how organisms are classified in the Animalia and Plantae kingdoms.

4th Grade

- #5 Describe the interdependence of plants and animals.
- Describing behaviors and body structures that help animals survive in particular habitats.
 - Describing life cycles of various animals to include incomplete and complete metamorphosis.
 - Tracing the flow of energy through a food chain.
 - Identifying characteristics of organisms, including growth and development, reproduction, acquisition and use of energy, and response to the environment.
- #6 Classify animals as vertebrates or invertebrates and as endotherms or ectotherms.
- Describing the organization of cells into tissues, organs, and organ systems.
 - Describing the grouping of organisms into populations, communities, and ecosystems.
 - Classifying common organisms into kingdoms, including Animalia, Plantae, Protista, Fungi, Archaeobacteria, and Eubacteria.

5th Grade

- #7 Identify common parts of plant and animal cells, including the nucleus, cytoplasm, and cell membrane.
- Comparing unicellular and multicellular organisms.
 - Comparing plant and animal cells.
- #8 Identify major body systems and their functions, including the circulatory system, respiratory system, excretory system, and reproductive system.
- #9 Describe the relationship of populations within a habitat to various communities and ecosystems.

- Describing the relationship between food chains and food webs.
- Describing symbiotic relationships.

6th Grade

#7 Describe the Earth's biomes.

- Identifying geographic factors that cause diversity in flora and fauna, including elevation, location, and climate.

7th Grade

#1 Describe characteristics common to living things, including growth and development, reproduction, cellular organization, use of energy, exchange of gases, and response to the environment.

- Identifying homeostasis as the process by which an organism responds to its internal or external environment.
- Predicting how an organism's behavior impacts the environment.
- Identifying unicellular organisms, including bacteria and protists, by their methods of locomotion, reproduction, ingestion, excretion, and effects on other organisms.
- Identifying the structure of a virus.

#4 Describe organisms in the six-kingdom classification system by their characteristics.

- Recognizing genus and species as components of scientific names.
- Identifying contributions of Aristotle and Linnaeus to the early history of taxonomy.

#5 Identify major differences between plants and animals, including internal structures, external structures, methods of reproduction, and stages of development.

- Describing the processes of photosynthesis and cellular respiration.

#7 Describe biotic and abiotic factors in the environment.

- Classifying organisms as autotrophs or heterotrophs.
- Arranging the sequence of energy flow in an ecosystem through food webs, food chains, and energy pyramids.

High School Biology

#5 Identify cells, tissues, organs, organ systems, organisms, populations, communities, and ecosystems as levels of organization in the biosphere.

- Recognize that cells differentiate to perform specific functions

#9 Differentiate between the previous five-kingdom and current six-kingdom classification systems.

- Sequencing taxa from most inclusive to least inclusive in the classification of living things.
- Identifying organisms using a dichotomous key.
- Identifying ways in which organisms from the Monera, Protista, and Fungi kingdoms are beneficial and harmful.
- Justifying the grouping of viruses in a category separate from living things.
- Writing scientific names accurately by using binomial nomenclature.

#11 Classify animals according to type of skeletal structure, method of fertilization and reproduction, body symmetry, body coverings, and locomotion.

#12 Describe protective adaptations of animals, including mimicry, camouflage, beak type, migration, and hibernation.

- Identifying ways in which the theory of evolution explains the nature and diversity of organisms.
 - Describing natural selection, survival of the fittest, geographic isolation, and fossil record.
- #13 Trace the flow of energy as it decreases through the trophic levels from producers to the quaternary level in food chains, food webs, and energy pyramids.
- Describing the interdependence of biotic and abiotic factors in an ecosystem.
 - Contrasting autotrophs and heterotrophs.
 - Describing the niche of decomposers.
 - Using the ten percent law to explain the decreasing availability of energy through the trophic levels.
- #14 Trace biogeochemical cycles through the environment, including water, carbon, oxygen, and nitrogen.
- Relating natural disasters, climate changes, nonnative species, and human activity to the dynamic equilibrium of ecosystems.
 - Describing the process of ecological succession.
- #15 Identify biomes based on environmental factors and native organisms.
- #16 Identify density-dependent and density-independent limiting factors that affect populations in an ecosystem.
- Discriminating among symbiotic relationships, including mutualism, commensalism, and parasitism.

High School Aquascience

- #1 Differentiate among freshwater, brackish water, and saltwater ecosystems.
- Identifying chemical, geological, and physical features of aquatic ecosystems.
- #5 Identify the genotype and phenotype for specific characteristics in aquatic animals resulting from selective breeding.
- Explaining the importance of anatomy and physiology in aquaculture.
- #6 Describe adaptations that allow organisms to exist in specific aquatic environments.
- #7 Describe processes and environmental characteristics that affect growth rates of aquatic animals.
- #8 Determine effects of the fishing industry on the aquatic environment.
- Describing basic principles involved in fish production.
 - Explaining various methods of pond preparation, predator control, and species management.
 - Explaining harvesting techniques and methods of transporting fish to market.