

# Zoology

Adopted 2019

Obtain, evaluate, and communicate information to derive the phylogeny of animal taxa using informative characteristics. [SZ1](#)

- a. Construct an explanation of the relationships among animal taxa using evidence from morphology, embryology, and biochemistry. [SZ1.A](#)
- b. Analyze and interpret data to explain patterns in structure and function and construct a classification of representative animal taxa including: Porifera, Cnidaria, Platyhelminthes, Nematoda, Annelida, Mollusca, Arthropoda, Echinodermata, and Chordata. [SZ1.B](#)
- c. Develop a model (i.e. cladogram, phylogenetic tree) using data to place taxa in a phylogenetic (evolutionary) context to support hypotheses of relationships [SZ1.C](#)

Obtain, evaluate, and communicate information to explain the evolutionary history of animals over the geological history of Earth. [SZ2](#)

- a. Construct an explanation of the geological history of earth and the effects of major environmental changes. [SZ2.A](#)
- b. Construct an explanation of how evolution allows species to adapt to environmental changes. [SZ2.B](#)

Obtain, evaluate, and communicate information to compare and contrast structure and function of morphological and genetic characteristics across representative taxa. [SZ3](#)

- a. Plan and carry out investigations to determine patterns in morphology (including organ systems, symmetry and body cavities) of representative animal taxa. [SZ3.A](#)
- b. Construct an explanation of life functions (i.e., reproduction, respiration, digestion) at appropriate level of organization for representative taxa. [SZ3.B](#)
- c. Construct an explanation based on evidence supported by evidence to relate important structural changes across evolutionary history to key functional transitions. [SZ3.C](#)

Obtain, evaluate, and communicate information to assess how animals interact with their environment and one another. [SZ4](#)

- a. Construct explanations to relate structure and function of animals to ecological roles, including morphological, physiological, and behavioral adaptations [SZ4.A](#)
- b. Develop a model to explain patterns in various life cycles found among animals (e.g., polyp and medusa in cnidarians; multiple hosts and stages in the platyhelminthes or nematode life cycle; arthropod metamorphosis; egg, tadpole, adult stages in the amphibian life cycle). [SZ4.B](#)

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- c. Construct an explanation based on evidence of the effects of symbiotic relationships between animals (i.e., parasites and disease vectors) and between animals and other organisms (i.e., algae in coral; protists in termites; parasites). SZ4.C**
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**Obtain, evaluate, and communicate information to analyze the relationship between humans and animals within various phyla. SZ5**

- a. Ask questions and define problems identifying the cause and effect of human activities on the biodiversity of organisms (including habitat destruction, overharvesting, water consumption, and pollution). SZ5.A**
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- b. Design a solution to preserve species diversity in natural and captive environments with regard to conservation, habitat restoration, breeding programs and management of genetic diversity at local and global levels. SZ5.B**
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- c. Construct an argument based on evidence of the short-term and long-term impacts of legal, societal, political, ethical, and economic decisions on animal diversity. SZ5.C**