

Animal Life Science (subphylum vertebrata)- 2nd Semester

Standards (NGSS) and Essential Questions:

LS1: From Molecules to Organisms: Structures and Processes

How do organisms live, grow, respond to their environment and reproduce?

LS1.A: Structure and Function

How do the structures of organisms enable life's functions?

LS1.B: Growth and Development of Organisms

How do organisms grow and develop?

LS1.C: Organization for Matter and energy flow in Organisms

How do organisms obtain and use the matter and energy they need to live and grow?

LS1.D: Information Processing

How do organisms detect, process and use information about the environment?

LS4.C: Adaptation

How does the environment influence populations of organisms over multiple generations?

LS4: Biological Evolution: Unity and Diversity

How can there be so many similarities among organisms yet so many different kinds of plants, animals and microorganisms?

LS4.A: Evidence of Common Ancestry and Diversity

What evidence shows that different species are related?

LS4.B: Natural Selection

How does genetic variation among organisms affect survival and reproduction?

LS4.C: Adaptation

How does the environment influence populations of organisms over multiple generations?

LS4.D: Biodiversity and Humans

What is biodiversity, how do humans affect it, and how does it affect humans?

Resources:

Text: Handbook of Nature Study, Anna Botsford Comstock
Keeping a Nature Journal, Clare Walker Leslie and Charles E. Roth
Web: Cornell Ornithology

Unit 1: Birds

Big Idea- How observing birds can teach us about systems found in the natural world and the role humans play.

Lesson	Objectives (SWBAT)
Feathers (Clothing, Ornament)	1. Identify the parts of a feather and their importance to a bird structurally and behaviorally
Flight and Migration	1. Explain the function of flight and migration
Eyes, Ears, Beaks, and Feet	1. Draw the structural adaptations of different birds and describe their importance
Bird Identification	1. Observe and record different local birds to survey. 2. Articulate importance of conservation efforts

Unit 2: Fish

Big Idea- The importance of fish culturally and on local economy

Lesson	Objectives (SWBAT)
Anatomy and physiology of a fish	1. label the different parts of a fish and the function each part plays in a fish's survival
Salmon	1. Identify the different types of salmon 2. Act out their life cycle 3. Map salmon migration 4. Describe cultural significance 5. Identify important economic impacts of fishing

Unit 3: Amphibians

Big Idea- Amphibians can be environmental indicators due to their role in the food chain

Lesson	Objectives (SWBAT)
Toad vs Frog (tailless amphibians)	1. Differentiate between Toads and frogs structurally and behaviorally 2. Describe environmental effects
Newt vs. Salamander (amphibians with tails)	1. Differentiate between Newts and Salamanders 2. Explain relationship of adaptations and co-evolution

Unit 4: Reptiles

Big Idea- Using reptile anatomy and physiology to teach us adaptation and biodiversity

Lesson	Objectives (SWBAT)
Snakes, Turtles, and Lizards	1. Identify structures and function

Unit 6: Mammals

Big Idea- Understanding the proper relationship between humans and other mammals based on ecological principles.	
Lesson	Objectives (SWBAT)
Mammal project	<ol style="list-style-type: none"> 1. Research Special adaptations (physical, behavioral), Habitat, Anatomy and physiology, human and environmental impact on mammal 2. Create a visual aid on research components 3. Present mammal and visual aid to class