

Grade & Course: Zoology	Topic: Unit 3: Semester 1 Review and Midterm	Duration: 2 Weeks
Teachers: Zoology PLC Teachers		

SZ1a: Construct an explanation of the relationships among animal taxa using evidence from morphology, embryology, and biochemistry.

SZ1b: Analyze and interpret data to explain patterns in structure and function, and construct a classification of representative animal taxa

SZ1c: Develop a model using data to place taxa in a phylogenetic context to support hypotheses of relationships

SZ4a: Construct explanations to relate the structure and function of animals to ecological roles, including morphological, physiological, and behavioral adaptations

Narrative / Background Information

Prior Student Knowledge: (REFLECTION – PRIOR TO TEACHING THE UNIT)

Students are expected to have background knowledge from their Biology class and previous Zoology units, including understanding basic cell structures, levels of organization, evolution, geologic history of life, and basic taxonomy and classification.

Year-Long Anchoring Phenomena: (LEARNING PROCESS)

There is a wide variety of animal diversity across the planet.

Unit Phenomena (LEARNING PROCESS)

Phenomenon: Animal variety in form and function is still a field of discovery.

Statement of Inquiry Statement:

Animal form and function within invertebrate animal phyla and across key taxa influence how animals interact with their environment.

Global Context:

Scientific and Technological Innovations

Key Concepts:

Change, Communication, Connections, Relationships, Development, Form, Systems

Related Concepts:

Environment, Interactions, Transformation, Patterns, Movement, Models, and Functions

Approaches to Learning Skills:

Thinking Skills: Critical thinking & examine, and evaluate evidence

Communication: Evaluating conclusions and active listening

Social: Collaboration and values of diversity

Self-Management: Improvements, feedback, and reflection

Research: Data methods and forming questions

Science and Engineering Practices:

Developing & Using Models
 Constructing Explanations
 Plan and carry out investigations
 Analyze and interpret data

Disciplinary Core Idea: (KNOWLEDGE & SKILLS):

Structure and function of each phylum
 Use comparative morphology, embryonic development patterns, and molecular data to explain evolutionary relationships.
 Use molecular and morphological evidence to support cladograms or phylogenetic trees.
 Explain how structural features like body shape, feeding strategies, and sensory structures relate to each group's niche.

Crosscutting Concepts (KNOWLEDGE & Skills)

Systems and Systems Model
 Stability and Change
 Scale, Proportion, and Quantity
 Cause and Effect
 Patterns

Approaches to Learning**Skills:****SEP**

-Constructing Explanations
 -Develop and Analyze Models.
 -Compare and Contrast

Disciplinary Core Ideas: (KNOWLEDGE & SKILLS)

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Possible Preconceptions/Misconceptions: (REFLECTION – PRIOR TO TEACHING THE UNIT)

- All behaviors are determined at birth.
- Organisms adapt to their environments over their lifetimes.
- Organisms are perfectly adapted to their environments.
- All aspects of an organism's traits are adaptive.
- The strongest always win and reproduce.
- DNA determines your destiny.
- The biggest animal is the best animal.

Key Vocabulary: (KNOWLEDGE & SKILLS)

Evolution, survival, fitness, adaptation, behavior, mating, species, habituation, conditioning, natural selection, relationships, life cycles.

Inquiry Questions:

Factual

How do scientists observe animal behavior and adaptations in the field?
What characteristics distinguish Chordates from other organisms?
Do animal behaviors evolve through natural selection?
What is animal behavior?
What is an adaptation?

Conceptual

Explain the mechanisms that drive adaptations.
Why do complex behaviors and adaptations drive evolution?
How do structural differences in animals function to meet similar needs?

Debatable

Is one type of adaptation or behavior more beneficial in the survival of a species than another?

Summative assessment

Midterm Cumulative Assessment for Semester 1

Relationship between summative assessment task(s) and statement of inquiry:

The tasks allow students to demonstrate their knowledge of animal form and function within invertebrate animal phyla and across key taxa, influencing how animals interact with their environment.

Unit Objectives: - Teaching and learning is focused on effective teamwork and collaboration

Inquiry & Obtain: (LEARNING PROCESS)	Evaluate: (LEARNING PROCESS)	Communicate: (LEARNING PROCESS)
Week 1 Semester 1 Review	-Students will receive a review of semester 1 material in class.	-Students will spend time in and out of class to prepare for their midterm. A study guide will be given in class.
Week 2 Midterm Cumulative Assessment	-Students will complete a cumulative assessment over semester 1 content. This will include a multiple-choice and free-response section.	-

Resources (hyperlink to model lessons and/or resources):

- Shape of Life website videos and activities
- YouTube videos of Dissections of specific animals
- Eyewitness videos
- Preserved specimens slides for observation and dissection
- BBC nature documentaries
- Schoology school course

Reflection: Considering the planning, process and impact of the inquiry

Prior to teaching the unit	During teaching	After teaching the unit