# MCS Zoology Subject Group Overview

## Fall Semester: Unit 1-3 (18 weeks)

<table>
<thead>
<tr>
<th>Unit Name</th>
<th>Unit 1: Introduction to Classification and Evolution</th>
<th>Unit 2: Invertebrates Part 1: Porifera, Cnidaria, Platyhelminthes, Nematoda, Annelida, and Mollusca</th>
<th>Unit 3: Midterm</th>
<th>Unit 4: Invertebrates Part 2: Arthropoda and Echinodermata</th>
<th>Unit 5: Vertebrates: Chordata</th>
<th>Unit 6: Human Impact and Invasive Species</th>
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<tbody>
<tr>
<td>Time Frame</td>
<td>8 weeks</td>
<td>8 weeks</td>
<td>2 weeks</td>
<td>6.5 weeks</td>
<td>8.5 weeks</td>
<td>3 weeks</td>
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<tr>
<td>Standards</td>
<td>SZ1a: Construct an explanation of the relationships among animal taxa using evidence from morphology, embryology, and biochemistry.</td>
<td>SZ1b: Analyze and interpret data to explain patterns in structure and function and construct a classification of representative animal taxa</td>
<td>SZ1c: Plan and carry out investigations to determine patterns in morphology</td>
<td>SZ1b: Analyze and interpret data to explain patterns in structure and function and construct a classification of representative animal taxa</td>
<td>SZ1b: Analyze and interpret data to explain patterns in structure and function and construct a classification of representative animal taxa</td>
<td>SZ5a: Ask questions and define problems identifying the cause and effect of human activities on the biodiversity of organisms</td>
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<td>SZ1c: Develop a model using data to place taxa in a phylogenetic context to support hypotheses of relationships</td>
<td>SZ3a: Plan and carry out investigations to determine patterns in morphology</td>
<td>SZ3b: Construct an explanation of life functions at appropriate level of organization for representative taxa</td>
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<td>SZ5b: 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.</td>
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<td>SZ2a: Construct an explanation of the geological history of earth and the effects of major environmental changes</td>
<td>SZ2b: Construct an explanation of how evolution allows species to adapt to environmental changes.</td>
<td>SZ3c: Construct an explanation based on evidence to relate important structural changes across evolutionary history to key functional transitions.</td>
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<td>SZ3c: Construct an explanation of life functions at appropriate level of organization for representative taxa</td>
<td>SZ5c: 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.</td>
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<td>SZ2b: Construct a model using data to place taxa in a phylogenetic context to support hypotheses of relationships</td>
<td>SZ4a: Construct explanations to relate structure and function of animals to ecological roles, including morphological, physiological, and behavioral adaptations</td>
<td>SZ4b: Develop a model to explain patterns in various life cycles found among animals</td>
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<td>Content Specific Information (texts, documents, methods)</td>
<td>Statement of Inquiry</td>
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<td>The geological history of Earth has influenced the form and function of organisms through geologic time.</td>
<td>Animal form and function within invertebrate animal phyla and across key taxa influence how animals interact with their environment.</td>
<td>Animal variety in form and function is still a field of discovery.</td>
<td>Animal diversity is influenced by human activities.</td>
<td>How does human activity impact the biodiversity of life on earth?</td>
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<td>Fossils from the Cambrian have representatives of almost all animal groups identified today.</td>
<td><strong>Phenomenon:</strong> Animal variety in form and function is still a field of discovery.</td>
<td><strong>Phenomenon:</strong> Animal diversity is influenced by human activities.</td>
<td><strong>Phenomenon:</strong> Humans share many structures with other vertebrate classes</td>
<td><strong>Phenomenon:</strong> Humans transport invasive species that impact local species</td>
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<td><strong>Crosscutting Concepts</strong></td>
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<td>● Stability and Change</td>
<td>● Systems and Systems Model</td>
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<td>CORE IDEAS</td>
<td>Distinguishing characteristics of animal groups with emphasis on evolution of transitional body structures and comparison of body systems as well as human and animal interactions,</td>
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**Behavioral Adaptations**

**SZ4b:** Develop a model to explain patterns in various life cycles found among animals

**SZ4c:** Construct an explanation based on evidence of the effects of symbiotic relationships between animals and between animals and other organisms.
# MCS Zoology Subject Group Overview

| and Quantity | ● Structure & Function  
|              | ● Cause & Effect  
|              | ● Patterns  
| CORE IDEAS | Characteristics of Animals; Classification and Taxonomy; Earth History; Evolution  
| CORE IDEAS | Distinguishing characteristics of animal groups with emphasis on evolution of transitional body structures and comparison of body systems as well as human and animal interactions,  
| CORE IDEAS | ecological role of invasive species in an environment  

| Common Assessments/Major Projects | CFA X 2  
| CSA X 2  
| Geological History mini project  
| Evidence of evolution activity  
| Classification/cladogram activity  
| Animal behavior introduction lab #1  
| CFA X 3  
| CSA X 2  
| Sponge Investigation  
| Planaria Investigative lab  
| Earthworm Dissection  
| Worm speed dating activity  
| Animal behavior introduction lab #2  
| Mollusk dissection  
| Hydra lab (if time permits)  
| Midterm practical | CSA X 1  
| CFA X 2  
| Grasshopper Dissection  
| Modeling an arthropod activity  
| Animal behavior introduction lab #3  
| Cladogram characteristics project (summative)  
| Echinoderm dissection  
| CSA | CFA X 2  
| Dissections  
| Skeletal comparisons  
| Final project (2 parts)  
| Final exam presentation |
# MCS Zoology Subject Group Overview

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<tr>
<th>Level Specific Differentiation</th>
<th>Introduction to dissection lab</th>
<th>Resources</th>
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<tr>
<td>● SWD/504 – Accommodations Provided as appropriate for student</td>
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<td>- marietta.schoology.com&lt;br&gt;- www ck12 org&lt;br&gt;- Miller and Levine Biology Textbook 2009, (Dragonfly book) workbook, text, and test bank&lt;br&gt;- Holt Biology Interactive Reader study guide&lt;br&gt;- Pearson online Biology Textbook&lt;br&gt;- Argument Driven Inquiry NSTA activity book&lt;br&gt;- Shape of Life website videos and activities&lt;br&gt;- Youtube videos of Dissections of specific animals&lt;br&gt;- Biologyjunction.com&lt;br&gt;- Biologycorner.com&lt;br&gt;- Ms Maria Knowles course sites (dissection resources)&lt;br&gt;- Eyewitness videos&lt;br&gt;- Preserved specimens slides for observation and dissection&lt;br&gt;- BBC nature documentaries</td>
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<td>● ELL – Reading &amp; Vocabulary Support</td>
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<td>● Intervention Support – Some options for alternative assignments as well as test remediation&lt;br&gt;- Scaffolded project template&lt;br&gt;- Presentation can be video, whole class, small group or individual</td>
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<td>● Intervention Support – Some options for alternative assignments as well as test remediation</td>
<td>● Extensions – Enrichment Tasks and Projects can include Case Studies, Data Nuggets, project choice, additional dissection opportunities</td>
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