

## Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
Aquatic Science Biology of Water	11 - 12	3 <sup>rd</sup> & 4 <sup>th</sup> Six Weeks	14 Weeks
<b>TEKS/Student Expectations</b>		<b>Examples/Specifications:</b>	
<p><b>Aq.1 Strand: Field &amp; laboratory Investigation</b>            (A) demonstrate safe practices during field and laboratory investigations; and            (B) make wise choices in the use and conservation of resources and the disposal or recycling of materials.</p> <p><b>Aq.2 Strand: Scientific Inquiry—Field &amp; Laboratory</b>            (A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;            (B) collect data and make measurements with precision;            (C) express and manipulate quantities using mathematical procedures such as dimensional analysis, scientific notation, and significant figures.            (D) organize, analyze, evaluate, make inferences, and predict trends from data; and            (E) communicate valid conclusions.</p> <p><b>Aq.3 Strand: Critical Thinking, Problem Solving &amp; Decision Making</b>            (A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;            (B) make responsible choices in selecting everyday products and services using scientific information;            (C) evaluate the impact of research on scientific thought, society, and the environment;            (D) describe the connection between environmental science and future careers; and            (E) research and describe the history of environmental science and contributions of scientists</p> <p><b>Aq.4 Strand: Components of Aquatic Ecosystems.</b>            (B) research and identify biological, chemical, geological,</p>		<p>Students will answer:</p> <ul style="list-style-type: none"> <li>• How are all aquatic species related in their physiology?</li> <li>• Organisms develop key adaptations to allow them to succeed in their given environment.</li> </ul>	

and physical components of an aquatic ecosystem; and  
**Aq.5 Relationships In Aquatic Environments.**  
(B) observe and evaluate patterns and interrelationships among producers, consumers, and decomposers in an aquatic ecosystem;  
(C) identify the interdependence of organisms in an aquatic environment such as a pond, river, lake, ocean, or aquifer, and the biosphere; and  
(D) evaluate trends in data to determine the factors that impact aquatic ecosystems..

**Aq.7 Strand: Adaptations of Aquatic Organisms.**

(A) classify different aquatic organisms using dichotomous keys;  
(B) compare and describe how adaptations allow an organism to exist within an aquatic environment;  
(C) predict adaptations of an organism prompted by environmental changes; and  
(D) compare differences in adaptations of aquatic organisms to fresh water and marine environments.

**Language of Instruction:**

**Instructional Resources/Textbook Correlations:**

## **TOPICS:**

### **1. Biology Basics Review**

- a. Organism Interactions**
- b. Ecology Review**
- c. Taxonomy & Evolution**
- d. Dichotomous Keys**

### **2. Invertebrates**

- a. Vertebrates vs. Invertebrates**
- b. Sponges & Cnidarians**
- c. Mollusks**
  - 1. Mussel Dissection**
  - 2. Squid Dissection**
- d. Arthropods**
  - 1. Crayfish Dissection**
- e. Crustaceans**
- f. Echinoderms**
  - 1. Starfish Dissection**

### **3. Fish - Correlate to BIOL. TEKS: 10A, 11B**

- a. Vertebrates**
- b. Osteichthyes**
  - 1. Perch Dissection**
- c. Chondrichthyes**
  - 2. Shark Dissection**
- d. Agnatha**

### **4. Marine Reptiles, Birds, and Mammals**

- a. cetacea**
- b. pinnepedia**
- c. sirenia**
- d. Sea Turtle I.D.**

	<p><b>Weblinks/Other Resources:</b></p> <p>Textbook:  <u>Fluid Earth</u>  <u>Living Ocean</u>  <u>Outside Resources</u></p>
<p><b>Evaluation/External Assessment/Local Assessment:</b></p>	<p><b>Best Instruction Timeline:</b></p>
<p>Daily Work  Homework  Labs  Teacher – designed test  Aquariums</p>	