

Teacher/Grade: K.Langdon	Topic: Horseshoe Crabs	Month/Time span: March-May
<b>EIC Curriculum Map</b>		

*Pennsylvania Academic Standards:*

<u>Environment &amp; Ecology</u>		<u>Reading, Writing, Speaking &amp; Listening</u>	
<ul style="list-style-type: none"> <li>• 4.1.4A</li> <li>• 4.6.4A</li> <li>• 4.7.4B</li> </ul>		<ul style="list-style-type: none"> <li>• 1.1.5A,BD</li> <li>• 1.2.5A</li> <li>• 1.4.5B</li> <li>• 1.8.5A,B,C</li> </ul>	
<u>Science &amp; Technology</u>		<u>Math</u>	
<ul style="list-style-type: none"> <li>• 3.3.4A</li> <li>• 3.3.4B</li> <li>• 3.5.4D</li> <li>• 3.7.4C,D,E</li> </ul>		<ul style="list-style-type: none"> <li>• N/A</li> </ul>	
<u>Civics &amp; Government</u>		<u>Geography</u>	<u>Arts and Humanities</u>
<ul style="list-style-type: none"> <li>• 5.1.6I</li> <li>• 5.1.6J</li> </ul>		<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• 9.1.5A,B,C,D</li> </ul>
<u>History</u>		<u>Career Education and Work</u>	<u>Economics</u>
<ul style="list-style-type: none"> <li>• N/A</li> </ul>		<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<u>Health Safety and Physical Education</u>		<u>Family and Consumer Science</u>	<u>World Languages</u>
<ul style="list-style-type: none"> <li>• N/A</li> </ul>		<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>

*Goals and Objectives:*

<p>4.1.4A Understand watersheds and wetlands</p> <p>4.6.4A Understand that living things are dependent on nonliving things</p> <p>4.7.4B Identify differences in living things</p> <p>3.3.4A Locate similarities and differences of living things.</p> <p>3.3.4B Living things are made up of parts with special functions</p> <p>3.5.4D Recognize earth's different water resources</p> <p>3.7.4D Use basic computer software</p> <p>5.1.6I Describe the making of rules by the government</p> <p>5.1.6J Identify ways the government protects and promotes the common good.</p> <p>1.1.5A,B,D Identify the basic ideas and facts from a text</p> <p>1.2.5A Read and understand essential content of informational texts</p> <p>1.4.5B Write multi-paragraph pieces</p> <p>1.8.5 A,B,C Select and complete a topic for research</p>
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*Overview of Integrated Activities:*

<ul style="list-style-type: none"> <li>• Listen and respond to teacher's prompts, cues, and questions regarding the book "A Journey into the Estuary"</li> <li>• Partner read the story "Extraordinary Horseshoe Crabs"</li> <li>• As whole class, analyze diagram of <i>limulus</i> and the function of parts.</li> <li>• Practice skills of scientific observation while creating scientific drawings of horseshoe crabs from preserved species.</li> <li>• Research organisms living in the Delaware Estuary and record history/role in ecosystem</li> </ul>	<ul style="list-style-type: none"> <li>• Create a full wall mural of the Delaware Estuary outside the 4<sup>th</sup> grade classroom.</li> <li>• Perform tests using samples of <i>Limulus</i> Lysate in order to demonstrate the use of horseshoe crab blood in medical testing.</li> <li>• Field trip to Delaware Estuary beaches to observe migrating shore birds, horseshoe crabs, and observe estuary biome.</li> <li>• Read Delaware Estuary newsletter and newspaper articles about regulations protecting horseshoe crabs and migrating shorebirds</li> <li>• Use the Internet to research the most recent legislative actions regarding estuary protection.</li> <li>• Technology Activity: visit the Critter Corner website and research Delaware estuary online</li> </ul>
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**EIC Curriculum Map*****Assessment***

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| <ul style="list-style-type: none"> <li>• 3.5.4(D) ,1.1.5(A,B,D) Create a KWL chart focusing on estuaries.</li> <li>• 1.1.5(A,B,D), 1.2.5(A) Read and respond to “Extraordinary Horseshoe Crabs” in the form of comprehension activity sheet.</li> <li>• 3.3.4(D), 9.1.5(D) Accurately label the parts and functions of horseshoe crab based on scientific drawing.</li> <li>• 1.8.5(A,B,C), 3.4.7(D) Research and write a report on specific organisms found within the Delaware Estuary.</li> </ul> | <ul style="list-style-type: none"> <li>• 9.1.5(D) Research and create a drawing to scale one organism from the estuary.</li> <li>• 4.7.4(B), 4.6.4(A) Locate shorebirds that migrate to from the Southern Hemisphere to the Arctic to nest. Recognize and record the needs of migrating birds to resources in the estuary.</li> <li>• 1.2.5(A) Record their field trip observations in their science journal, including drawings and annotations.</li> <li>• 3.4.7(D), 5.1.6(J), 1.8.5(A,B,C), 1.4.5(B) Write a multi-paragraph report on the role the government has taken in protecting the estuaries and organisms that live there.</li> <li>• 1.6.5(A) Orally present researched information to whole class.</li> </ul> |
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***Resources***

*A Journey into an Estuary*, Rebecca Johnson  
*Extraordinary Horseshoe Crabs*, Julie Dunlap  
*Crab Moon*, Ruth Horowitz  
*Estuary News*, [Newsletter of Partnership for the Delaware Estuary](#)  
*Living in Water*  
 An Aquatic Science Curriculum