

Science Research Scope & Sequence

Days	Unit	Standard(s)/Outcome(s)	Essential/Guiding Questions
	Processes of Research <ul style="list-style-type: none"> ● Organization ● Significant Figures ● Biodiversity 	<p>Model the process of scientific research.</p> <p>Define and distinguish between the process of research and engineering processes.</p> <p>Distinguish between a descriptive and an informative abstract.</p> <p>Evaluate an informative abstract.</p> <p>Apply two statistical functions to raw data</p>	<p>What is research in the scientific community?</p> <p>Why is communication so important in scientific research?</p>
	Mini Projects and Research Skills <ul style="list-style-type: none"> ● Chestnut tree research and statistics ● Water quality and nitrogen cycle ● Aquaculture tank systems ● Bay grasses ● Hydroponics, 	<p>Define aquaculture and explain its importance to the Chesapeake Bay.</p> <p>Describe the parts needed to complete an aquaculture system.</p> <p>Calculate volume and surface area of a tank system</p> <p>Calculate flow rates of tank filters and explain the importance for the</p>	

	<p>aquaponics, and grant writing</p> <ul style="list-style-type: none"> ● Microbiology ● Biofilms and biodiversity ● spectro-photometry 	<p>calculation.</p> <p>Evaluate an aquaculture system that was designed or already operating.</p> <p>Design an aquaponics for the growth of vegetables</p> <p>Construct a grant to fund an aquaponics project.</p> <p>Explain the importance of adaptation and design with the research process</p> <p>Define ecological role of bay grass (SAV)</p> <p>Explain the role of the nitrogen cycle in biological filtration</p> <p>Apply various measures of biodiversity to a set of data.</p>	
	<p>Main Project <i>(MUST BE APPROVED BY ALL THREE OF THE FOLLOWING: INSTRUCTOR, PRINCIPAL, AND</i></p>	<p>Apply research skills to a project of one's choice and then evaluate and communicate new information and findings</p>	

	<p><i>SCIENCE SUPERVISOR.)</i></p> <ul style="list-style-type: none">● Project guidelines● Using and applying research skills● Application of the experimental method● Communication of the main research project		
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