



# Capture Sheet

Title	Do My Actions Make a Difference?
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Audience (grade, course)	8 <sup>th</sup> Grade Science

## Curriculum Anchor

Curriculum Standards/ Learning Objectives	Context	Driving Question
<p><u>Catholic Social Teaching Standard:</u></p> <ul style="list-style-type: none"> <li>Care for God’s Creation</li> </ul> <p><u>Next Generation Science Standard:</u></p> <p>MS-PS1-2 Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.</p> <p><u>Maryland Social Studies Standard:</u></p> <p>3.0 Geography Topic D. – Modifying and adapting to the environment Indicator 1. Analyze why and how people in the United States modify their natural environment and the impact of these modifications.</p>	<p>Environmental problem, issue, phenomenon, or opportunity that serves as the context for learning.</p> <p>Ocean acidification – CO<sub>2</sub> reacts with water to produce carbonic acid. Acid breaks down calcium carbonate. This could have implications for organisms with calcium carbonate shells, such as oysters.</p> <p>Excess Nitrates can lead to algal blooms. These algal blooms can lead to decreased sunlight which inhibits photosynthesis, ultimately resulting in decreased dissolved oxygen levels.</p>	<p>How do human actions impact chemical reactions in the Chesapeake Bay?</p>

<b>Issue Investigation</b>	<b>Stewardship &amp; Civic Action</b>
<p data-bbox="332 344 597 373" style="text-align: center;"><b>Student Objectives</b></p> <ul data-bbox="178 401 792 915" style="list-style-type: none"><li>• Students will research the effects of acidity on organisms of the Chesapeake Bay and ocean.</li><li>• Students will research effects of excess nitrogen on photosynthesis in the Chesapeake Bay.</li><li>• Students will research the causes of acidity and nitrogen changes in the Chesapeake Bay and ocean.</li><li>• Students will discuss the methods of water quality testing and determine possible testing sites.</li><li>• Students will conduct water quality testing.</li></ul>	<p data-bbox="1024 344 1289 373" style="text-align: center;"><b>Student Objectives</b></p> <ul data-bbox="870 436 1490 653" style="list-style-type: none"><li>• Students will create a public service announcement to be aired on the WNDP morning program to educate students about their findings regarding the effects of acidity or excess nitrogen on organisms of the Chesapeake Bay.</li></ul>