

NERRS Estuaries 101 High School Curriculum
Salinity and Tides in York River
Next Generation Science Standards (NGSS) Alignment

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Analyzing and Interpreting Data</p> <p>Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.</p> <ul style="list-style-type: none"> • Construct, analyze, and/or interpret graphical displays of data and/or large data sets to identify linear and nonlinear relationships. • Use graphical displays (e.g., maps, charts, graphs, and/or tables) of large data sets to identify temporal and spatial relationships. [Exercise 2] • Distinguish between causal and correlational relationships in data. • Analyze and interpret data to provide evidence for phenomena. <p>Analyzing and Interpreting Data</p> <p>Analyzing data in 9–12 builds on K–8 experiences and progresses to introducing more detailed statistical analysis, the comparison of data sets for consistency, and the use of models to generate and analyze data.</p> <p>Analyze data using tools, technologies, and/or models (e.g., computational, mathematical) in order to make valid and reliable scientific claims or determine an optimal design solution. (HS-ESS2-2)</p>	<p>ESS2.C: The Roles of Water in Earth’s Surface Processes</p> <ul style="list-style-type: none"> • Global movements of water and its changes in form are propelled by sunlight and gravity. (MS-ESS2-4) <p>ESS2.C: The Roles of Water in Earth’s Surface Processes</p> <p>The abundance of liquid water on Earth’s surface and its unique combination of physical and chemical properties are central to the planet’s dynamics. These properties include water’s exceptional capacity to absorb, store, and release large amounts of energy, transmit sunlight, expand upon freezing, dissolve and transport materials, and lower the viscosities and melting points of rocks. (HS-ESS2-5)</p>	<p>Cause and Effect: Mechanism and Explanation</p> <ul style="list-style-type: none"> • Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. • Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-ESS2-5) • Phenomena may have more than one cause, and some cause and effect relationships in systems can only be described using probability. <p>Cause and Effect</p> <p>Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects. (HS-ESS2-4)</p> <p>Stability and Change</p> <ul style="list-style-type: none"> • Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and processes at different scales, including the atomic scale. (MS-ESS2-1) <p>Stability and Change</p> <p>Much of science deals with constructing explanations of how things change and how they remain stable. (HS-ESS2-7)</p> <p>Change and rates of change can be quantified and modeled over very short or very long periods of time. Some system changes are irreversible. (HS-ESS2-1)</p>