

## South Carolina Science Curriculum Standards (Grades 9-12)

Standard	Description of Standard	How the Tutorial Can Help Address the Standard
I.C.	Use Technology and Mathematics to Improve Investigations and Communications	<ul style="list-style-type: none"> <li>• Students will be able to explain how water-quality measurements in SI units are used to assess the health of aquatic ecosystems.</li> <li>• Students will learn how to measure water quality in SI units using the appropriate instruments.</li> <li>• Students will be able to discriminate between water-quality data that may be valid or anomalous.</li> </ul>
II.D.5	Human beings live within the world's ecosystems. Increasingly, humans modify ecosystems as a result of population growth, technology, and consumption. Human destruction of habitats through direct harvesting, pollution, atmospheric changes, and other factors is threatening current global stability, and if not addressed, ecosystems will be irreversibly affected.	<ul style="list-style-type: none"> <li>• Students will be able to identify events, such as nutrient, thermal, and sediment pollution, that lead to awareness of environmental concerns.</li> <li>• Students will be able to assess the consequences of land development and certain land use practices on water quality and aquatic ecosystems.</li> <li>• Students will be able to assess the consequences of acid rain on aquatic ecosystems.</li> </ul>
II.F.2	Organisms have behavioral responses to internal change and external stimuli. Responses to external stimuli can result from interactions with the organism's own species and others, as well as environmental changes; these responses can be either innate or learned. The broad patterns of behavior exhibited by animals have evolved to ensure reproductive success. Animals often live in unpredictable environments, and so their behavior must be flexible enough to deal with uncertainty and change. Plants also respond to stimuli.	<ul style="list-style-type: none"> <li>• Students will be able to discuss how aquatic organisms might respond to changes in water quality.</li> </ul>

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IV(Chemistry).B.4	The physical properties of compounds reflect the nature of the interactions among its molecules. These interactions are determined by the structure of the molecule, including the constituent atoms and the distances and angles between them.	<ul style="list-style-type: none"><li>• Students will be able to explain how the solubility of oxygen in water varies at different temperatures.</li></ul>
IV(Chemistry).C.3	A large number of important reactions involve the transfer of either electrons (oxidation/reduction) or hydrogen ions (acid/base reactions) between reaction ions, molecules, or atoms. In other reactions, chemical bonds are broken by heat or light to form very reactive radicals with electrons ready to form new bonds. Radical reactions control many processes such as the presence of ozone and greenhouse gases in the atmosphere, burning and processing of fossil fuels, formation of polymers, and explosions.	<ul style="list-style-type: none"><li>• Students will be able to identify acids and bases in terms of their pH.</li><li>• Students will be able to discuss the neutralizing capacity of seawater.</li><li>• Students will be able to explain how acid rain is formed and discuss its effects on the environment.</li></ul>