

CURRICULUM

CURRICULUM CONNECTIONS

This section is for educators who want more specific information regarding the grade 9 curriculum for each activity in the *Environmental ER* crate.

Grade 9: Table of Outcomes for Science, Technology, Society and Knowledge

General outcomes:

Investigate and evaluate potential risks resulting from consumer practices and industrial processes, and identify processes used in providing information and setting standards to manage these risks. (Unit C: Environmental Chemistry - Social and Environmental Emphasis)

Identify and evaluate information and evidence related to an issue in which environmental chemistry plays a major role. (Unit C: Environmental Chemistry - Social and Environmental Emphasis)

Activity	Unit	STS-Knowledge Outcomes
Chemist	Matter and Chemical Change	<p>Investigate materials, and describe them in terms of their physical and chemical properties.</p> <p>Distinguish between pure substances, solutions, and mechanical mixtures.</p> <p>Observe and describe evidence of chemical change in reactions between familiar materials by: describing combustion.</p> <p>Apply simplified chemical nomenclature in describing elements, compounds, and chemical reactions.</p>
Wildlife Biologist	Environmental Chemistry	<p>Describe the uptake of materials by living things through ingestion or absorption, and investigate and describe evidence that some materials are difficult for organisms to break down or eliminate.</p> <p>Describe and illustrate the use of biological monitoring as one method for determining environmental quality.</p> <p>Comprehend and interpret information on the biological impacts of hazardous chemicals on local and global environments.</p>
Aquatic Ecologist	Environmental Chemistry	<p>Describe the uptake of materials by living things through ingestion or absorption, and investigate and describe evidence that some materials are difficult for organisms to break down or eliminate.</p> <p>Identify chemical factors in an environment that might affect the health and distribution of living things in that environment.</p> <p>Describe and illustrate the use of biological monitoring as one method for determining environmental quality.</p> <p>Comprehend and interpret information on the biological impacts of hazardous chemicals on local and global environments.</p>

Grade 9: Table of Knowledge Outcomes

Activity	Unit	STS - Knowledge Outcomes
Hydrogeologist	Environmental Chemistry	<p>Describe mechanisms for the transfer of materials through air, water, and soil; and identify factors that may accelerate or retard distribution.</p> <p>Describe and illustrate processes by which chemicals are introduced to the environment or their concentrations are changed (eg. dilution in streams)</p> <p>Apply and interpret measures of chemical concentration in parts per million, billion or trillion.</p> <p>Comprehend and interpret information on the biological impacts of hazardous chemicals on local and global environments.</p> <p>Identify questions that may need to be addressed in deciding what substances- in what amounts - can be safely released into the environment.</p>
Soil Scientist	Environmental Chemistry	<p>Describe mechanisms for the transfer of materials through air, water, and soil; and identify factors that may accelerate or retard distribution.</p> <p>Comprehend and interpret information on the biological impacts of hazardous chemicals on local and global environments.</p>
Environmental Toxicologist	Environmental Chemistry	<p>Identify substrates and nutrient sources for living things within a variety of environments.</p> <p>Describe the uptake of materials by living things through ingestion or absorption, and investigate and describe evidence that some materials are difficult for organisms to break down or eliminate.</p> <p>Describe and illustrate processes by which chemicals are introduced to the environment or their concentrations are changed (eg. biomagnification through food chains).</p> <p>Comprehend and interpret information on the biological impacts of hazardous chemicals on local and global environments.</p>
Recovery Specialist	Environmental Chemistry	<p>Describe and evaluate methods used to transport, store, and dispose of hazardous household chemicals.</p> <p>Describe mechanisms for biodegradation, and interpret information on the biodegradability of different materials.</p>