



Cumberland River Compact Education Resources and Programs

<https://cumberlandrivercompact.org/what-we-do/education/>

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Program	Standards
Creek Critters	<p><i>3.LS4.3: Explain how changes to an environment's biodiversity influence human resources.</i></p> <p><i>3.ESS2.1: Explain the cycle of water on Earth.</i></p> <p><i>4.LS2.2: Develop models of terrestrial and aquatic food chains to describe the movement of energy among producers, herbivores, carnivores, omnivores, and decomposers.</i></p> <p><i>4.LS2.3: Using information about the roles of organism (producers, consumers, decomposer), evaluate how those roles in food chains are interconnected in a food web, and communicate how the organisms are continuously able to meet their needs in a stable food web.</i></p> <p><i>4.LS2.4: Develop and use models to determine the effects of introducing a species to, or remove a species from, an ecosystem and how either one can damage the balance of the ecosystem.</i></p> <p><i>4.LS2.5: Analyze and interpret data about changes (land characteristics, water distribution, temperature, food, and other organisms) in the environment and describe what mechanisms organism can use to affect their ability to survive and reproduce.</i></p> <p><i>6.LS2.2: Determine the impact of competitive, symbiotic, and predatory interactions in an ecosystem</i></p> <p><i>6.LS2.3: Draw conclusions about the transfer of energy through a food web and energy pyramid in an ecosystem.</i></p> <p><i>6.ESS3.3: Assess the impacts of human activities on the biosphere including conservation, habitat management, species endangerment, and extinction.</i></p>
The Incredible Journey	<p><i>2.ESS1.1: Recognize that some of Earth's natural processes are cyclical, while others have a beginning and an end. Some events happen quickly, while others occur slowly over time.</i></p> <p><i>3.ESS2.1: Explain the cycle of water on Earth.</i></p>





	<p><i>*We've done this activity for enrichment in 1st grade classes, although it does not align directly with standards.</i></p>
Pollution in our Water	<p><i>2.LS2.2: Predict what happens to animals when the environment changes (temperature, cutting down trees, wildfires, pollution, salinity, drought, land preservation).</i></p> <p><i>2.ESS2.4: Use information obtained from reliable sources to explain that water is found in the ocean, rivers, streams, lakes, and ponds, and may be solid or liquid.</i></p> <p><i>3.LS4.1: Explain the cause and effect relationship between a naturally changing environment and an organism's ability to survive.</i></p> <p><i>3.ESS2.1: Explain the cycle of water on Earth.</i></p> <p><i>3.ESS3.1: Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment.</i></p> <p><i>3.ESS3.2: Design solutions to reduce the impact of natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) on the environment.</i></p> <p><i>4.ESS3.2: Create an argument, using evidence from research, that human activity (farming, mining, building) can affect the land and ocean in positive and/or negative ways.</i></p>
iCreek	<p><i>6.ESS2.4: Apply scientific principles to design a method to analyze and interpret the impact of humans and other organisms on the hydrologic cycle.</i></p> <p><i>EVSC.ESS2.5: Plan and carry out an investigation examining the chemical and physical properties of water and the impact of water on Earth's topography. Analyze data and share findings.</i></p> <p><i>EVSC.ESS3.4: Gather, organize, analyze, and present data on current land use trends by humans. Based on analysis, predict future trends.</i></p> <p><i>EVSC.ESS3.5: Plan and carry out an investigation examining best management practices in water usage, agriculture, forestry, urban/suburban development, mining, or fishing and communicate findings.</i></p> <p><i>EVSC.ESS3.13: Analyze and interpret data on the effects of land, water, and air pollution on the environment and on human health. Propose solutions for minimizing pollution from specific sources.</i></p> <p><i>EVSC.ETS3.1: Plan and carry out an investigation of a local ecosystem to assess human impacts. Based on your findings, design and evaluate a solution to minimize impacts.</i></p> <p><i>AP Environmental Science: Land and Water Use Unit & Aquatic and Terrestrial Pollution</i></p>
Stormwater Model	<p><i>3.ESS2.1: Explain the cycle of water on Earth.</i></p> <p><i>3.ESS3.1: Explain how natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) impact humans and the environment.</i></p>





	<p>3.ESS3.2: Design solutions to reduce the impact of natural hazards (fires, landslides, earthquakes, volcanic eruptions, floods) on the environment.</p> <p>4.ESS3.2: Create an argument, using evidence from research, that human activity (farming, mining, building) can affect the land and ocean in positive and/or negative ways</p> <p>EVSC.ETS3.1: Plan and carry out an investigation of a local ecosystem to assess human impacts. Based on your findings, design and evaluate a solution to minimize impacts.</p> <p>AP Environmental Science: Land and Water Use Unit & Aquatic and Terrestrial Pollution</p>
Aquatic Biodiversity Simulated Investigation	<p>BIO1.LS4.3: Identify ecosystem services and assess the role of biodiversity in support of these services. Analyze the role human activities have on disruption of these services.</p> <p>ECO.LS2.2: Research examples of adaptations of organisms in major marine and freshwater ecosystems. Develop an explanation for the formation of these adaptations and predict how the organisms would be affected by environmental disturbances or long-term ecological changes.</p> <p>ECO.LS2.10: Plan and carry out an investigation measuring species diversity (richness and evenness) and density in a local ecosystem.</p> <p>EVSC.LS2.2: Develop an explanation of behavioral and physical adaptations organisms have for life in aquatic habitats with varying chemical and physical features.</p> <p>AP Environmental Science: Land and Water Use Unit & Aquatic and Terrestrial Pollution</p>
Stormwater Audit	<p>4.ESS3.2: Create an argument, using evidence from research, that human activity (farming, mining, building) can affect the land and ocean in positive and/or negative ways</p> <p>EVSC.ETS3.1: Plan and carry out an investigation of a local ecosystem to assess human impacts. Based on your findings, design and evaluate a solution to minimize impacts.</p> <p>AP Environmental Science: Land and Water Use Unit & Aquatic and Terrestrial Pollution</p>
Urban Hike	<p>4.ESS3.2: Create an argument, using evidence from research, that human activity (farming, mining, building) can affect the land and ocean in positive and/or negative ways.</p> <p>EVSC.ETS3.1: Plan and carry out an investigation of a local ecosystem to assess human impacts. Based on your findings, design and evaluate a solution to minimize impacts.</p> <p>AP Environmental Science: Land and Water Use Unit & Aquatic and Terrestrial Pollution</p>