

Lessons offered through Cumberland County Soil & Water Conservation District's **Stormwater Education Program**

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Subject	Lesson name	Description	Grades
Adaptations	Water Address	Analyze clues to match organisms with water-related adaptations	Middle
	Salt Marsh Players	Role-play organisms adapted to life in a salt marsh	Elem-Middle
Conservation	Water in the World	Demonstration of fresh water availability in the world (typically done with "Incredible"	Elem-Middle
Hydropower	Dam Debate	Students participate as stakeholders in a mock town meeting about dam removal	Middle
Land Use Planning	Plan to Protect	Planning a town with water quality in mind	Middle-High
Macroinvertebrates	Benthic Bugs & Bioassessment	Conduct a bioassessment using "macroinvertebrates" and analyze findings to determine water quality of in-class "streams"	Middle
	Macroinvertebrate Mayhem	Game where students are macroinvertebrates and learn how populations can indicate water quality (*Large area needed - gym or outdoors*)	Middle
	Macroinvertebrate Sampling	Collecting and identifying macroinvertebrates to assess water quality	Middle-High
Mapping	Creating Contours	Topography, contour lines, and assembling a watershed	Middle-High
	There is No Point to this Pollution	Students analyze data to solve a mystery, interpret a topographic map, and analyze and compare water quality data to learn about the cumulative impacts of nonpoint source pollution	Middle-High
	Topographic Map Studies	Students explore local topographic maps to explore contour lines, local water bodies, water and pollution flow, and/or watershed delineation.	Middle-High
	Presumpscot River Watershed Maps	Exploration of customized maps of the Presumpscot River Watershed. Choose from population density, land uses, impervious surfaces, dams, stream classifications, watershed, and historical maps.	Middle-High
Pollution:	Marsh Mystery	Students read a mystery story and, to solve the mystery, play a game that demonstrates how pollution accumulates in a food chain	Middle-High
	A-maze-ing Water	Discuss nonpoint source pollution and where storm water goes. Students travel through a maze of "drainage pipes" as "water" to learn how actions in the home and yard affect water quality.	Elem-Middle
	Stormwater Stew	Students participate in a story about stormwater pollution by adding "pollutants" to "rivers"	Elem-Middle
	Solution Charades	Students work in pairs to act out different sources of and solutions for pollution	Elem-Middle
	Nutrients: Nutrition or Nuisance?	Discuss the nutrients plants need and the effect of excess nutrients on water, and play a game to simulate the difference vegetation can make near water (similar to "Just Passing Through") (*Large area needed - gym or outdoors*)	Middle

Nonpoint Source	Recipe for Trouble	Conduct a classroom experiment to test the effects of various pollutants on water environments	Middle-High
	There is No Point to this Pollution	Students analyze data to solve a mystery, interpret a topographic map, and analyze and compare water quality data to learn about the cumulative impacts of nonpoint source pollution	Middle-High
	School Yard Pollution Scavenger Hunt	Students learn about nonpoint source pollutants and survey their own school yard	Elem-Middle
	Stream Walk	Walking to a nearby stream to assess and discuss water flow and ground surface types and their effect on permeability and pollution (*Outdoor activity*)	Middle-High
	Research Projects	Materials developed for students to conduct research projects about watershed stakeholders and nonpoint source pollutants.	Middle-High
Pollution: Prevention	Build a Buffer	Build a model to learn about buffers & impervious surfaces and how each affects pollution and runoff	Elem-Middle
	Just Passing Through	Students simulate water movement down a vegetated and nonvegetated slope, see a demonstration about how rain can dislodge soil, and discuss erosion prevention practices (best management practices) (*Large area needed - gym or outdoors) (Similar to "Turbidity or Not Turbidity" and "Nutrients: Nutrition or Nuisance?")	Elem-Middle
	Turbidity or Not Turbidity	Students observe clear and turbid water, simulate water movement down a vegetated and nonvegetated slope, and examine practices for erosion prevention (best management practices) (*Large area needed - gym or outdoors*)(Similar to "Just Passing Through" activity)	Middle
	Erasing Erosion	Discussion of Conservation Districts, erosion control laws, eutrophication, and PowerPoint presentation about different types of erosion and before and after pictures of best management practices (BMP) to prevent erosion, followed by a school yard scavenger hunt to find erosion and prescribe an appropriate BMP.	Middle-High
Soil	Nature's Filter	Test the filtering capacity of various soils (*Only available when ground is thawed*)	Middle-High
	Soil Testing	Using test kits to test soil for pH, nitrogen, phosphorus, potassium	Middle-High
	Recipe for Soil	Cover the importance of soil and its three types, and discover what soil is made of by "making" it using rocks, leaves, water, etc.	Elem-Middle
States of Water	Molecules in Motion	Game where students simulate molecular movement in water's physical states (solid, liquid, gas) (*Large area needed - gym or outdoors*)	Elem-Middle

Waste Water	Sparkling Water	Discussion of the history, treatment, and compilation of wastewater. Students conduct an experiment where they develop strategies to remove contaminants from "wastewater"	Middle-High
Water Cycle	Incredible Journey	Game where students are water droplets that travel to various locations the water cycle takes them (typically done with "Water in the World")	Elem-Middle
Water Quality	Water Quality Presentation	PowerPoint presentation covering watersheds, nonpoint source pollutants, & water quality parameters (& riparian buffers - optional)	Middle-High
	Water Quality Testing	Using test kits & probes to test for some/all of the following, in or out of the classroom: pH, temperature, dissolved oxygen, turbidity, conductivity, nitrates, coliform,	Middle-High
	Macroinvertebrate Sampling There is No Point to this Pollution	Collecting and identifying macroinvertebrates to assess water quality Students analyze data to solve a mystery, interpret a topographic map, and analyze and compare water quality data to learn about the cumulative impacts of nonpoint source pollution	Middle-High Middle-High
Watershed	Branching Out	Read "Where the River Begins," discuss water systems' branching patterns, build a watershed model with tin foil, predict the path of water, and "rain" on models	Elem-Middle
	Watershed Relay	Students are parts of the watershed (river, mountains, wetland, pollutants) and demonstrate how water travels (*Messy - outdoor activity*)	Elem-Middle
Wildlife	Smell Your Way Home	Discussion of the Atlantic salmon life cycle and game where students must smell their way "home" to demonstrate that part of the life cycle	Elem-Middle

