

# Youth Education



**Cumberland County Soil & Water Conservation District** protects our local soil and water resources through education and technical assistance. Our STEM-based lessons are developed in accordance with national science standards and led by student investigations that connect them to their local environment.

Lessons can be delivered to classrooms, camps, and community groups. Most lessons can be covered in one class period or be extended into a series of visits. Contact us to schedule your meaningful environmental education program!

[www.cumberlandswcd.org/education](http://www.cumberlandswcd.org/education) | [Connect@cumberlandswcd.org](mailto:Connect@cumberlandswcd.org) | (207) 892-4700

## Forestry

### **Invasive Forest Pests** (Best for grades 5-8)

While identifying and collecting data about local trees, we discuss how invasive pests, like the Emerald Ash Borer, impact native trees in Maine.

MS-LS2-4, MS-LS2-5, MS-ESS3-1, MS-ETS1-1, K-ESS3-3

### **Invasive Plants** (Best for grades 5-8)

What makes a good plant invader? Students will discover the characteristics of invasive plants and how humans can prevent them from spreading.

MS-LS2-4, MS-LS2-5, MS-ESS3-1, MS-ETS1-1, K-ESS3-3

### **What's the Value of a Tree?** (Best for grades 5-8)

Students identify examples of economic, ecological, educational, cultural, and recreational values and apply them to trees impacted by invasive forest pests. Recommended as background lesson to Invasive Forest Pests.

MS-LS2-4, MS-LS2-5, MS-ESS3-1

## Soil and Agriculture

### **Maine Foods for Maine Kids** (Best for grades K-8)

Help your students understand the connection between their fork and farmers' fields. Learn about food supply chains and the differences between monocrops and multi-crops. Combine this lesson with annual Maine Harvest Lunch celebrations.

MS-ESS3-3, MSLS2-5, K-ESS3-3

### **Mission: Pollination!** (Best for grades 2-8)

Pollinators connect ecosystem elements and support our farms. Learn about these important creatures and the struggles they are facing today. Help protect pollinators by planting their favorite plants and creating habitat. Some groups may even get the chance to meet these beneficial creatures!

MS-ESS3-3, MSLS2-5, K-ESS3-3

### **The Nature of Soil** (Best for grades 3-12)

Soils are the foundation of the environment, farms, and food! Students will learn about the importance of soil, what it's made of, and how to test the health of a soil sample.

HS-LS2-4, HS-LS2-7, MS-ESS3-1, MS-LS2-5, MS-LS2-1

### **Nature's Filter** (Best for grades 5-8)

Which soil is the best filter? Students conduct an experiment comparing the characteristics of different soil types. Based on their observations, they will make real-world connections.

HS-ESS2-5, HS-LS2-7, MS-ESS3-1, MS-LS2-5

### **Nutrient Recycling** (Best for grades 6-12)

Plants need two key nutrients, nitrogen and phosphorous, to grow. Students learn how these nutrients cycle throughout the ecosystem and the impacts of when they are out of balance.

HS-LS2-4, HS-LS2-7, MS-ESS3-1, MS-LS2-5, MS-LS2-1

### **Soil Texture & Soil Health** (Best for grades 6-12)

How healthy is your soil? Students begin to answer this question by collecting soil samples around the school campus and test for soil texture, pH, nitrogen, potassium, and phosphorous.

### **Program Rates:**

One 45-60 minute lesson: \$400

Additional class or lesson during visit: \$100

Field Trips & Service Learning: Contact us for an estimate.

Lesson materials are available to borrow pending District needs.

**Payment Policy:** Payment is expected on or before the first visit. Credit cards and checks payable to CCSWCD are accepted.

**Scholarships may be available, contact us for more information.**

# Water & Conservation

## **Aquatic Food Webs** (Best for grades 5-8)

Everybody is somebody's next meal. Students build a pond food web to learn how energy moves between plants, animals, and the environment.

MS-LS2-3, MS-LS2-1

## **Benthic Bugs and Bioassessment** (Best for grades 6-12)

Learn how these insects can tell us the health of the water.

Students identify simulated bug populations in the classroom.

HS-ESS3-1, HS-LS2-7, HS-ETS1-3, MS-LS2-1, MS-LS2-4

## **Marvelous Macros** (Best for grades 3-12)

Learn how these insects can tell us the health of the water.

Students identify real bug populations in the classroom or visit a nearby stream to sample macros in the wild.

HS-ESS3-1, HS-LS2-7, HS-ETS1-3, MS-LS2-4, MS-ESS3-3

## **Build a Buffer** (Best for grades 3-8)

Learn how plants can be clean water heroes and protect water bodies from polluted runoff. Students build their own model to demonstrate the importance of plants!

MS-LS2-4, MS-ESS3-3, MS-ESS2-3, K-ESS3-3

## **Dam Debate** (Best for grades 6-12; 2-3 sessions)

Get ready to attend a town meeting about a dam removal.

Students become different stakeholders to learn the process of environmental decision making.

HS-ESS3-1, HS-ESS2-2, HS-LS2-7, HS-LS2-7, HS-ETS1-3, MS-ESS3-3

## **Erasing Erosion** (Best for grades 5-12)

Learn about the most common water pollutant, the process of erosion, and how to prevent it. A school yard erosion scavenger hunt turns students into real environmental stewards.

MS-LS2-4, MS-ESS3-3, MS-ESS2-3, K-ESS3-3

## **Field Trip: Source to Sea** (Best for grades 3-12)

Travel through your watersheds and discover the connections between water quality and land use first hand through multiple stops along the way.

HS-ESS2-2, HS-ETS1-3, HS-LS2-7, MS-LS2-4, MS-ESS3-3, MS-ESS2-3, K-ESS3-3

## **Follow Flow** (Best for grades K-6)

Meet Flow, the water droplet. Students follow her journey from land to stream to connect how actions on land affect water resources.

MS-LS2-4, MS-ESS3-3, K-LS1-1, K-ESS3-3

## **Groundwater** (Best for grades 6-12)

Our drinking water can come from surface waters or aquifers.

Learn how our actions above ground can impact the health of water deep underground.

HS-ESS3-1, MS-ESS3-3, MS-ESS2-4, MS-ESS2-3, K-ESS3-3

## **Healthy Water** (Best for grades 6-8)

Students learn about water quality parameters (algae, clarity, temperature, dissolved oxygen, hazardous chemicals, harmful bacteria) to determine healthy levels for drinking water, recreation, and aquatic life.

## **Hold that Pollution!** (Best for grades 5-8)

Students learn about best management practices and design site plans to prevent pollutants from reaching the water.

MS-LS2-4, MS-ESS3-3, MS-ESS2-3, K-ESS3-3

## **Raising Brook Trout** (Best for grades K-12)

Turn your classroom into a fish hatchery as students raise brook trout from egg to fry! In this multi-lesson unit, students observe the life cycle of brook trout and learn about the environmental factors that affect aquatic species before releasing the trout into a local stream.

HS-LS2-4, HS-ESS2-2, MS-LS2-4, MS-ESS3-3

## **Stormwater Stew** (Best for grades 2-8)

Students tell the journey of five alewives as they travel down "rivers" and encounter stormwater pollutants to observe the cumulative impacts of human activities.

MS-LS2-4, MS-ESS3-3, K-LS1-1, K-ESS3-3

## **Swim for Your Life** (Best for grades 6-8)

Learn about brook trout anatomy, habitat, adaptations, life cycle, and the challenges of survival to adulthood. Students encounter different habitat, food, and predation obstacles through multiple rounds of gameplay.

MS-LS1-4, MS-LS2-1, MS-LS2-4, MS-ESS3-4

## **Tipping the Scales** (Best for grades 5-8)

Students explore different human impact scenarios and how they change aquatic ecosystems. Recommended as follow up to Aquatic Food Webs lesson.

MS-LS2-3, 5-LS2-1, K-ESS3-3

## **Water Cycle**

Students learn about water movement and water distribution through activities that get you moving through the cycle!

### **Connecting the Drops** (Best for grades 1-5)

K-ESS3-3, K-LS1-1

### **Wonders of the Water Cycle** (Best for grades 6-8)

MS-ESS2-4, MS-ESS3-3, MS-LS2-3, MS-ESS2-3

## **Water Worries** (Best for grades 6-8)

Students evaluate the qualities of eight common water pollutants to determine how they impact drinking water, recreation, and aquatic life.

MS-ESS3-4

## **Watersheds**

We all live in a watershed. Students make predictions and test how water will move and collect using watershed models.

Students will also make connections to regional and local watersheds.

### **My Watershed** (Best for grades 2-5)

K-ESS3-3

### **What's a Watershed** (Best for 6-8)

MS-ESS2-4

### **EnviroScope Watershed** (Best for 6-12)

HS-ESS2-2, HS-LS2-7, MS-LS2-4, MS-ESS3-3, MS-ESS2-3

## **What Water is This?** (Best for grades 6-12)

Students use water quality parameters (pH, salinity, turbidity, conductivity, and dissolved oxygen) to identify their mystery water samples.

HS-ESS3-1, HS-LS2-7, HS-ETS1-3, MS-ESS3-3