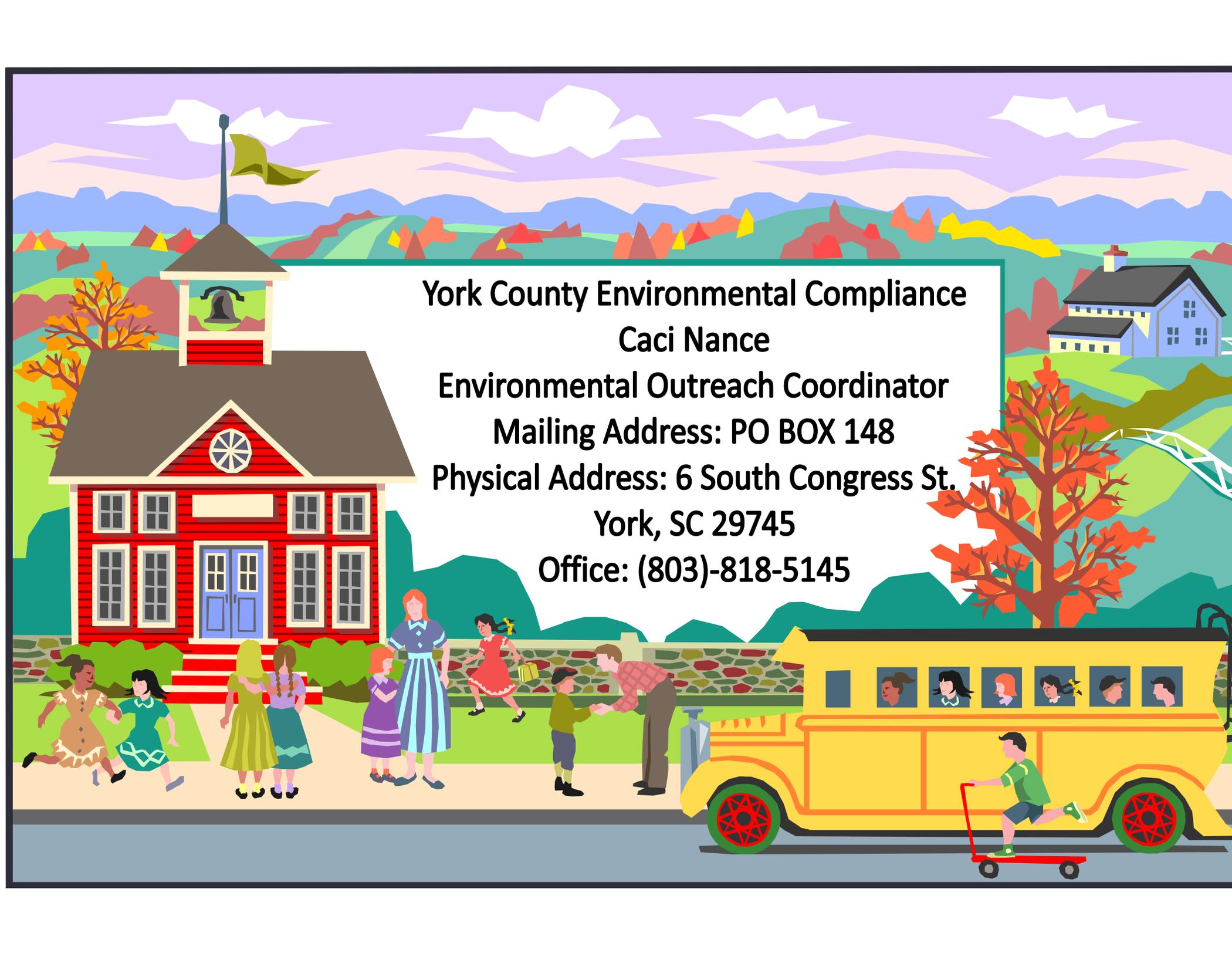


Cultivating the next generation of watershed stewards!



Water Education Program for PreK- 12



York County Environmental Compliance

Caci Nance

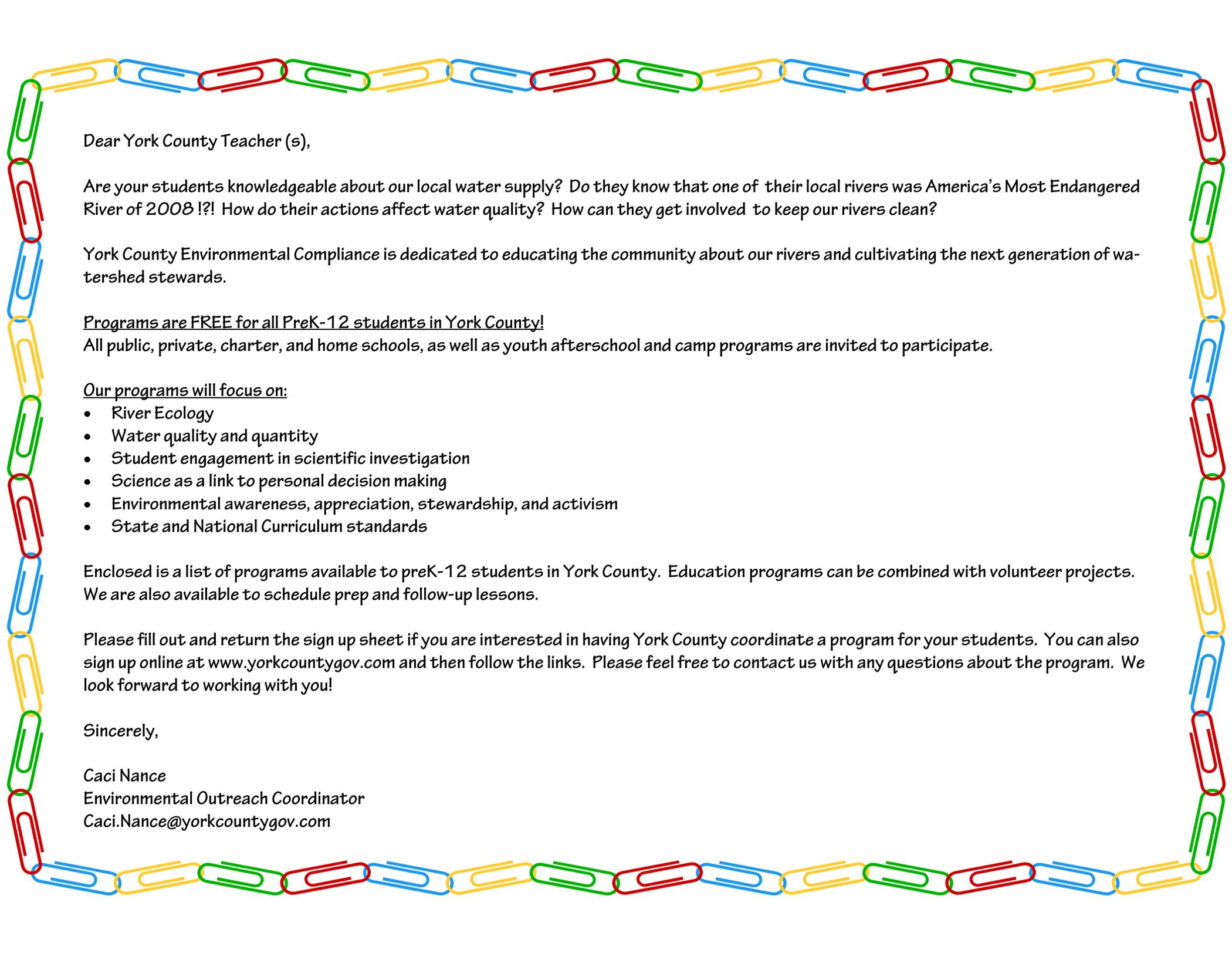
Environmental Outreach Coordinator

Mailing Address: PO BOX 148

Physical Address: 6 South Congress St.

York, SC 29745

Office: (803)-818-5145



Dear York County Teacher (s),

Are your students knowledgeable about our local water supply? Do they know that one of their local rivers was America's Most Endangered River of 2008 !?! How do their actions affect water quality? How can they get involved to keep our rivers clean?

York County Environmental Compliance is dedicated to educating the community about our rivers and cultivating the next generation of watershed stewards.

Programs are FREE for all PreK-12 students in York County!

All public, private, charter, and home schools, as well as youth afterschool and camp programs are invited to participate.

Our programs will focus on:

- River Ecology
- Water quality and quantity
- Student engagement in scientific investigation
- Science as a link to personal decision making
- Environmental awareness, appreciation, stewardship, and activism
- State and National Curriculum standards

Enclosed is a list of programs available to preK-12 students in York County. Education programs can be combined with volunteer projects. We are also available to schedule prep and follow-up lessons.

Please fill out and return the sign up sheet if you are interested in having York County coordinate a program for your students. You can also sign up online at www.yorkcountygov.com and then follow the links. Please feel free to contact us with any questions about the program. We look forward to working with you!

Sincerely,

Caci Nance
Environmental Outreach Coordinator
Caci.Nance@yorkcountygov.com

Kids in the Creek

Grades: 4-12 Lesson Links: EnviroScape, Macro. Mayhem
Setting: Stream Topics: Water quality, ecology Time: approx. one hour
*Liability waiver required

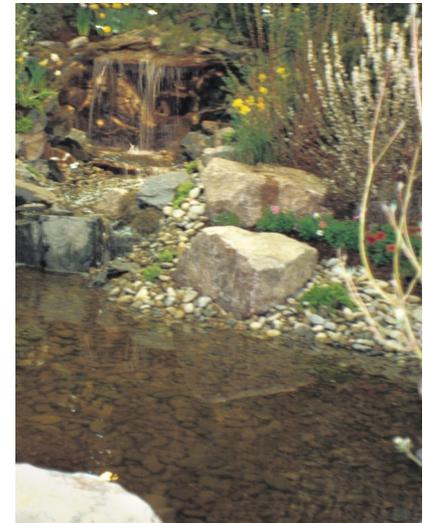
What is the ultimate field trip location that is low cost, convenient, fun and educational? A river, creek or stream! It is likely that one is located near you school, and there is no better way for students to learn than through this hands-on lesson.

“Kids in the Creek” provides an outdoor experiential learning opportunity for students to learn about aquatic factors affecting water quality of our streams and the aquatic organisms that live there.

Students will be active participants in catching and identifying aquatic insects. Based on the types of bugs identified and their pollution sensitivity; we will calculate a Pollution Tolerance Index for the stream we are studying.

Older students can conduct chemical water test for pH, turbidity, nitrates, phosphates, and dissolved oxygen.

York County will provide all lesson materials. Students must wear shoes that can get wet (cros are ideal, flip-flops not recommended).



Contact us to locate an accessible stream near your school!

Woodland Wonders with the Wuppets (Water Puppets)

Grades: **Preschool-3rd grade** Topics: **Watershed, water quality, pollution and stormwater runoff**
Setting: **Classroom** Time: **30-45 minutes**

This lesson will bring the watershed, streams and rivers right into your classroom. Students will have the opportunity to learn from the Wuppets what a watershed is, how water quality is determined, how to prevent pollution and what stormwater runoff is. This show explains the importance of protecting our waterways, not only for ourselves but our animal friends also. Students will have the opportunity to help clean up our water ways throughout the skit. Once the skit has finished T.Y.L.E.R. the turtle will help the students make their own turtle to take home and share the message with their family.

A Hiking We Will Go:

Grades: **3-8**

Setting: **Classroom** Time: **approximately 1 hour**

Jamie and his family go hiking what will they find? Students will learn about various types of pollution and have the opportunity to identify, describe and classify water pollution. The EnviroScape will be used to help demonstrate these concepts. Students will have the chance to interact and participate during this presentation.

Who Polluted the River?

Grades: **preK and Up**

Setting: **Classroom** Time: **approximately 30 minutes**

In this activity, students participate in an interactive story and learn how, as human populations have increased and land uses have changed, many of our rivers have become polluted. This example demonstrates that just as each contribute to the problem, we can also each be part of the solution.

Runoff Race

Grades: 2-12 Subject Areas: Earth Science, Geology Setting: Classroom Time: about 20 minutes

How would you define water quality? Do you have the same definition as your friend?

This demonstration offers a hands-on demonstration of wetland's ability to improve water quality by filtering out sediments. Water quality is an all-encompassing term, with many facets that are commonly misunderstood. As future citizens, homeowners, and professionals, students should be able to discuss the importance of wetlands and plants in tempering some of our most pressing environmental problems, including water quality.

Wetland in a Pan

**Grades: 3-12 Subject Areas: Earth Science, Environmental Science
Setting: Classroom Time: 90 minutes if students make models; 30-40 for demonstration**

Use model to demonstrate the flood-buffering and filtering effects of wetlands. Students will be able to discuss practical, everyday issues concerning the beneficial functions of wetlands.

Water Purifiers

**Grades: 6-12 Subject Areas: Environmental Science, Chemistry Setting: Classroom
Time: approximately 1 hour**

Demonstrations of mechanical and natural methods of filtering impurities from water. People drink water every day. However they may not consider all the steps involved in ensuring safe drinking water. An understanding of what is needed to treat and sustain a clean drinking water supply helps future citizens prepare to make wise decisions about the use of land and water resources.

EnviroScape

Grades: Prek-12

Lesson Links: All Topics: Watersheds, water quality

Setting: Classroom or Stream Time: 30 minutes



EnviroScape is a plastic model of a watershed that shows students the effects that pollution can have on water quality. This is a great educational tool that teaches the watershed concept in addition to point and non-point source pollution.

Students will:

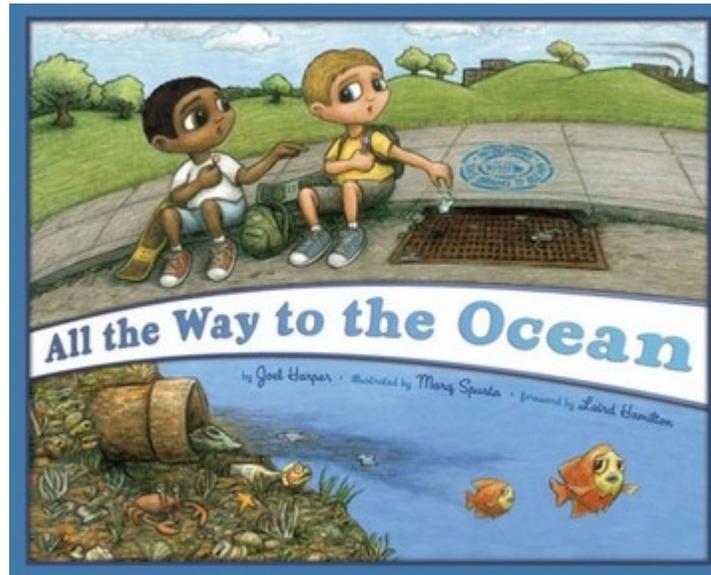
- Learn different components of a watershed
- Gain an understanding of the roles of roads, buildings, animals, factories, and farms
- Participate in putting together the pieces of the watershed
- Figure out how human activities in a watershed affect water quality
- Create a rainstorm to visualize how storm-water runoff carries pollution
- Learn ways that everyone can help prevent pollution

All the Way to the Ocean

Grades: **Preschool-3rd Grade**

Lesson Links: **EnviroScape, Kids in the Creek**

Topics: **watersheds, water quality, storm drain run-off** Setting: **classroom** Time: **30 minutes**



In a lesson guaranteed to fill the classroom with the sound of rain, brightly colored pictures, and googly-eyed puppets, this lesson teaches students that everything entering storm drains flows all the way into rivers, streams, and eventually the ocean. The lesson's broad range of interactive participation allows students to utilize rain-sticks and trash and aquatic life puppets to act out the negative effects of pollution. They also get to don the volunteer vest and simulate a real stream clean up. "Volunteers" use litter pick up sticks to take the trash puppets from their friend and place them in a big orange trash bag, giving them a sense of satisfaction and importance. The lesson ends with a river free from trash, the waving of "No Dumping" stickers, and happy sock puppets. As part of the lesson, classes have the option of locating a storm drain near their school placing a real "NO DUMPING" sticker on it.

Nature's Filter

Grades: prek-12 Subject Areas: Earth Science Setting: Classroom Time: about 30 minutes

Test the filtering ability of several types of soil.

Wetlands are vital to water quality, since they filter out pollutants in several ways. Students who understand this will better appreciate the value of maintaining and protecting wetlands.

A Drop in the Bucket

Grades: 6-8 Subject Areas: Earth Science, Mathematics, Geography
Setting: Classroom Time: 1 hour

What is abundant and rare at the same time? By estimating and calculating the percent of available fresh water on Earth, students understand that this resource is limited and must be conserved.

Students may know Earth is mainly covered, by water, but they may not realize that only a small fraction is available for human consumption. Learning that water is a limited resource helps students appreciate the need to use water resources wisely, including protection of wetlands and watersheds.

Science Standards

K-1, K-2, K-4, K-5
1-1, 1-4
2-1, 2-3, 2-4
3-1, 3-2, 3-3
4-1, 4-2, 4-4
5-1, 5-2, 5-3, 5-4
6-1, 6-4
7-1, 7-4, 7-5
8-1, 8-3
PS-1
B-1, B-5, B-6
C-1
ES-1, ES-4, ES-5

Standards associated with presentation(s):

Social Studies Standards

K-4, K-5
1-2
2-2
3-1

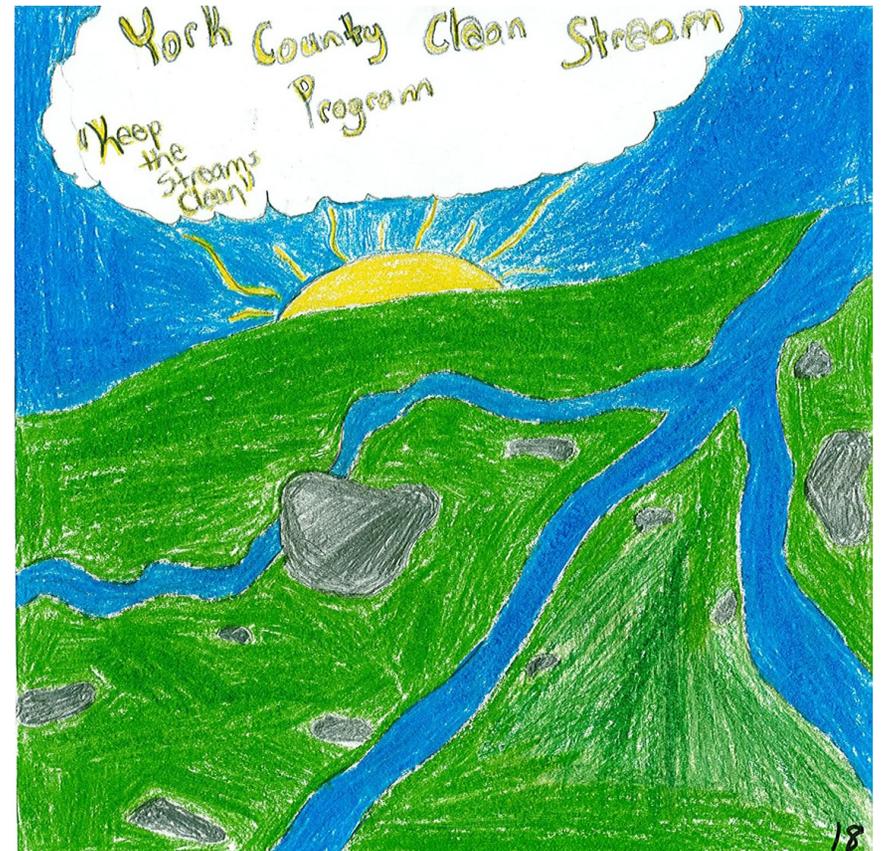
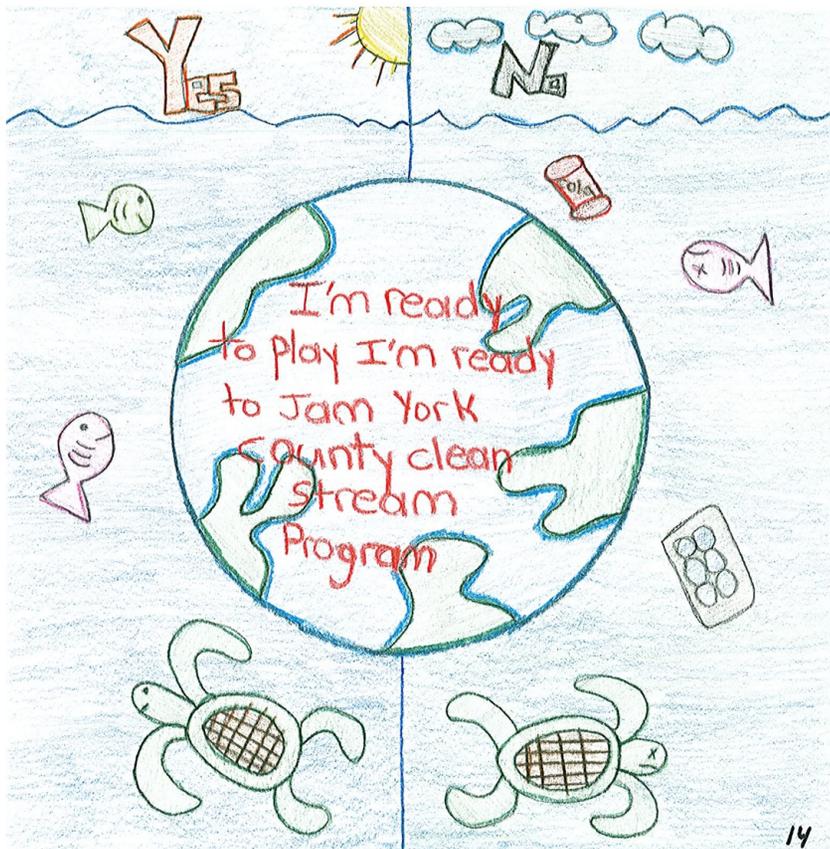
More Options to come!

River of Words & Art

Grades: PreK-12 Lesson Links: All Topics: Art, Writing
Setting: Classroom or Stream Time: 30 minutes

York County is implementing a program called River of Words and would like for as many schools and classes (k-12) as possible to participate in creating art and poetry based on our local rivers. Some of the submissions will be included in a York County River of Words book and possibly be part of an art exhibit. These submissions would then be sent for inclusion in the international River of Words publication.

This program offers a very exciting and interesting way for children to learn more about their watershed, while also contributing to an informed appreciation of the natural world. It also helps improve children's literacy and cognitive skills. This type of multidisciplinary, hands-on approach to education nurtures students' creative voices as well, through instruction and practice in art and poetry.



Submission Deadline: March 19, 2010

Entries will be grouped in categories by writing, 2D artwork, and Bookmark Art as well as grade: PreK-2, 3-5, 6-8, and 9-12. All entries should be submitted to York County Environmental Compliance. Entries will be judged by local artists, York County EC staff, and volunteers. This program can be combined with a River of Words and Art lesson presented by York County EC staff.

Prizes and Recognition: Winners and select honorable mentions will be displayed at York County offices. Winners will receive prizes and are invited to participate in an award ceremony. Bookmark Winner's work will appear on bookmarks passed out at publicity events. All participants are also eligible for their artwork to be displayed at various Earth Day events, published on the county website, and future calendars. All participants will receive a small prize.

Guidelines:

- Each entry must have the following information on the back to be eligible:
 - Title
 - Name of Student
 - Age & Grade level
 - Teacher's Name (classroom, art, or homeroom teacher)
 - School or home address
 - School or home phone number
- Optional: Students are encouraged to include a short description of their work, how they chose their topic, and why they think it is important to learn about the rivers in York County.
- This contest is open to all residents in York County.
- Ages 3-19 but youth aged 17-19 must still be enrolled in high school.
- Each contestant may only enter one time.
- All entries must be original work.
- Writing must either be typed or written in ink and easy to read.
- Two dimensional artwork may not exceed 11" x 17" and be able to hang on a wall. Mediums can include crayons, chalk, pencils, paint, ink, markers, photography (at least 8" X 10"), collage or computer art.
- Bookmark art should reflect some type of river stewardship and will be shrunk to 7" x 2 3/4" bookmark.
- By entering the contest participants agree to all York County Environmental Compliance to display, reproduce, and publish the submitted piece.
- Entries can either be mailed to P.O. Box 148, York, SC 29745 or can be dropped off at the York County Engineering office, located at 6 South Congress St., York, between 8 a.m. and 5 p.m.

York County Water Education Program

ᅇign ᅚp Shøøt

Form also available online at:

Please mail, email or fax this from back to York County EC at least two weeks prior to program date
 Caci.Nance@yorkcountygov.com ~ 803-684-8596 ~ phone 803-818-5145

York County Engineering
 ATTN: Environmental Outreach Coordinator
 PO BOX 148, York, SC 29745

Thank you! The Environmental Outreach Coordinator will contact you soon.

Teacher/Coordinator:		
School/Group Name:		
Grade/Age range:		Number of Students:
Title of class if middle or high school:		
Address:		
Work Phone:		
Dates & Times: *Please indicate several available dates and times at least two weeks in advance.	1st Choice Date: _____ Time: _____	Time: _____
	2nd Choice Date: _____ Time: _____	Time: _____
	3rd Choice Date: _____ Time: _____	Time: _____
If participating in an outdoor class, do you have a creek stream, or river location in mind? _____ No, please help us find a suitable location. _____ Yes, I have one in mind! Location: _____		
Please Send me more info:	_____ Adopt-A-Stream _____ River of Words & Art Contest Other: _____	
Please tell us how you heard about our Water Education program:	_____ Email _____ Website _____ Word of Mouth _____ Newspaper Other: _____	
May we invite the media (TV, newspaper, magazine, etc) to cover your student's participation in this program? _____ Yes _____ No		