

K-12 French Broad Watershed Education



Educating and empowering the next generation of watershed stewards



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Place-Based Watershed Education with RiverLink: Relevant, Engaging, and Fun

Are your students connected to their watershed?

With RiverLink students leave lessons with an understanding of the watershed concept. They know how their actions on land impact waterways. They can investigate stream health. And they are empowered to act as stewards of their environment.

RiverLink is a non-profit organization that promotes the economic and environmental vitality of the French Broad River watershed as a destination to live, learn work, and play. We are dedicated to educating and empowering the next generation of watershed stewards. Programs are offered at no cost to groups of Kindergarten through 12th grade students in the French Broad Watershed.

Our programs focus on:

- French Broad River ecology
- The watershed concept
- The scientific process
- Science and its role in decision-making
- Water quality and stewardship
- State science standards

RiverLink provides:

- Lesson facilitation by RiverLink staff and volunteers
- In-class lessons
- Field trips to local streams
- Lesson materials
- FUN and educational lesson plans

To schedule a program with RiverLink:

1. Read below lesson descriptions
2. Choose lessons and fill out sign-up sheet completely
3. Return sign-up sheet to RiverLink at least 2 weeks before desired date (via email or mail)
4. RiverLink staff will contact you to confirm your program details

Please contact us if you have questions regarding lessons.

We look forward to working with you!

RiverLink Education Coordinator
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Kids in the Creek

“Kids in the Creek” field trips focus on the factors that affect local water quality. Through exploration of a local creek, students come to understand the watershed concept and discover methods scientists use to monitor stream health.



Younger students learn to **identify aquatic insects** and collect them from a local stream. They then discuss which of the **macroinvertebrates** they found are sensitive to pollution and what this might indicate for the stream’s health.

In addition to using macroinvertebrate findings to calculate the stream’s **Pollution Tolerance Index**, older students can perform **chemical water quality tests** to measure pH, turbidity, dissolved oxygen, nitrate, and phosphate levels.

RiverLink will provide lesson materials. Groups must provide chaperones to reach a 1:10 adult to student ratio. Adults and students should wear water- and weather-appropriate clothing and shoes. Waders in adult shoe sizes five and up can be made available upon request.

The “Kids in the Creek” program was developed as a collaborative educational effort, funded by the Pigeon River Trust Fund, with the assistance of the Tennessee Valley Authority, Buncombe County Soil and Water Conservation, and UNCA’s Environmental Quality Institute.

Grades:

Macroinvertebrate sampling: 3rd-12th
Chemical Testing: 7th-12th

Time:

Macroinvertebrate sampling: 1 hour
Chemical Testing: Additional 30 minutes-1 hour

Pre-Trip:

Macroinvertebrate sampling: 30 minutes
Chemical Testing: Additional 15 minutes

Setting:

Stream; we will try to choose a stream with close proximity to your school. Stream choices are based on access, impact, and likelihood of finding macroinvertebrates.

EnviroScape

EnviroScape, a plastic watershed model, **illustrates human impacts on water quality.**

Students first discuss components of the watershed and discover that they are a part of the watershed. As they place buildings, roads, animals, and trees on the model, students learn that what happens on land affects what happens to our water.

Rain falls over the landscape and carries soil (cocoa), chemicals (food coloring) and oil (cocoa and water mixture) through the watershed to a body of water. Stormwater runoff and storm drain function are also addressed.

EnviroScape is most appropriate as a standalone lesson for Kindergarten through 3rd grades, or as a teaching tool or refresher for 4th through 8th grades.

Grade Levels

K-8th

Time

45 minutes

Pre-Trip

None

Setting

Indoor or outdoor



Voices of the River

Grade Levels

PreK-12th

Time

30+ minutes

Pre-Trip

None

Setting

Indoor or outdoor

Each year, RiverLink celebrates Earth Day through our Voices of the River **Art and Poetry Contest**. We invite preK-12 grade students in the French Broad Watershed to reflect on their connection to the earth by creating **2D art, 3D art, and poetry**.

This program offers a creative way for students to engage with their watershed, and for the community to see what its youngest members find meaningful. Voices of the River lessons may be scheduled throughout the school year. Submissions are judged by local artists and community members. Then, at the annual Voices of the River Celebration, students receive recognition and prizes and can view their art on display. Following the celebration, students' art is displayed around the community. Visit riverlink.org/art-poetry-contest to see this year's theme and other details. Students are welcome to participate with or without a Voices of the River lesson from RiverLink.

All the Way to the Ocean

In a lesson guaranteed to fill the classroom with the sound of rain, brightly colored pictures, and googly-eyed puppets, students learn that everything entering **storm drains** flows into rivers, streams, and eventually into the ocean.

At the end of the story, students wear RiverLink volunteer vests and **simulate a real stream clean up**. “Volunteers” use pick up litter sticks to take trash puppets from classmates and place them in an orange trash bag. The lesson ends with a river free from trash and happy sock puppets. As a part of the lesson, classes have the option of locating a storm drain near their school and placing a “No Dumping” sticker on it. (Please mention your interest in doing so when you fill out the sign up sheet.)

Grade Levels

PreK-3rd

Time

30+ minutes

Pre-Trip

None

Setting

Indoor or outdoor



Sum of the Parts

Students become developers in this lesson and learn how the **impacts of their decisions** can be amplified by the choices of other land-users. In this lesson each student receive a ‘parcel’ of land to develop. Each parcel includes undeveloped land and part of a body of water. Students draw what they want on their land and then come together to see what their whole watershed looks like.

Each student talks about what is on their parcel and how it affects the watershed as a whole. Each student receives a piece of “pollution” as they name the effects of their development. The landowner at the headwaters then passes their pollution to the next person down the river. Students continue until the student at the end has all of the pollution. We discuss how our actions affect others and what we can do to become river stewards.



Grade Levels

K-5th

Time

45 minutes

Pre-Trip

None

Setting

Indoor or outdoor

Lessons adapted from Project WET

Branching Out

Students build a model landscape to investigate how water flows through and connects watersheds.

Grades: 3-12

Topics: Watersheds, topography

Time: 30 min

Setting: Indoor or outdoor

Common Water

Students play roles of different water users to illustrate how water quality and quantity are affected by growing populations

Grades: K-8

Topics: Water quality, water use

Time: 15 min

Setting: Indoor or outdoor

Drop in the Bucket

Students learn how much water exists on Earth, how much is available for human use, and why water is a limited and valuable resource.

Grades: K-8

Topics: Water quantity

Time: 15-30 min

Setting: Indoor or outdoor

Incredible Journey

With a roll of the die, students simulate the movement of water within the hydrologic cycle: from clouds to rivers to oceans to glaciers!

Grades: 3-5

Topics: Water cycle, water quality

Time: 30 min

Setting: Gym or field

Just Passing Through

Students compare the rate at which water flows down slopes with and without plant cover and identify practices that can prevent erosion.

Grades: 3-5

Topics: Water quality, erosion

Time: 30 min

Setting: Gym or field