

Exploring your Watershed: Cape Fear River

High School Environmental Science Lesson

NC Curriculum Standards for Earth and Environmental Science:

EEn.2.4.1 Evaluate human influences on freshwater availability

- Explain various water uses by humans and evaluate for benefits and consequences of use (ex. wells, aquifer depletion, dams and dam removal, agriculture, recreation).

EEn.2.4.2 Evaluate human influences on water quality in North Carolina's river basins, wetlands and tidal environments.

- Analyze non-point source pollution and effects on water quality (sedimentation, stormwater runoff, naturally and human induced occurrences of arsenic in groundwater).

Objectives:

- Students come away knowing what watershed they live in and how humans have interacted with the river over the centuries
- students examine their own relationship to water
- students understand personal and collective actions they can take to improve the health of the watershed

Online Version of the Timeline:

To access an interactive online version of the timeline, please go to [this](#) link.

Lesson Outline:

personal relationship to water: In small groups (5 minutes)

- *instructor:* tell a personal story about water. Ex.) When I lived in the Northwoods of Wisconsin, I took a group of students on a camping trip near Lake Superior, which is one of the largest freshwater lakes in the world. One night, we discovered the Northern Lights dancing over the lake. We went out to the beach and watched the lights dance to the rhythm of the waves. This was the first time seeing the Northern Lights for many of us, so it was a particularly special night.
- *Students:* Talk about a personal experience you have with water. This can be a special place you've visited, a stream near your school that you've explored, a large storm you remember, etc. Select a volunteer from your group to share out to the class.

Introduction to the watershed (5 minutes)

- What is a watershed? Does anyone know what watershed we are in right now?
- We are in the Cape Fear River Basin. On a large scale, river basins and watersheds are essentially the same. Let's examine a GIS map of this river basin.
 - [Find your Ecological Address](#)- type in name of school and work with river basin, sub basin, watershed and sub watershed layers
 - What stream/creek does the runoff from your school drain into?
- *Alternative method, if time allows:* write the link up on the board and allow students to explore the layers on their own.

Exploring the History of the Cape Fear (20 minutes)

- Now we are going to break up into groups of 4 and have you work on a timeline activity. The events in your packet are all things that have happened in or around the Cape Fear River Basin. Your job is to match the event with its correct picture and then put all these events in order. When you are done, the instructor will come around and check your answers using a key. *Make sure you print the "no dates" version of the timeline and mix them up prior to handing the packets out! Also print, cut out and attach the dates sheet in the google folder.*
- While you are doing this activity, be thinking about common themes or ways you could categorize these events. What are some common threads between them? How do they relate to each other?
- Once everyone is finished, take some time for reflection:
 - How difficult or easy was this activity for you?
 - Had you heard of any of these events? Do you have a personal connection to any of these events?
 - What were some of the common themes that your group identified?
 - What was the most surprising part of this activity for you?

Delving Deeper (10 minutes)

- In your groups, choose one of these events that you would like to research further. For the next 10 minutes, work with your group to answer the following questions:
 - How is your event related to **environmental health and impacts**?
 - How is your event related to **humans and human activity**? Did humans cause it? Were humans impacted? Did your event impact everyone equally or were there certain groups of people that were hit hardest?
 - How is your event related to **economics**? Are there economic costs/benefits associated with this event? Did this event help or hurt the economy? In what way?
 - Would you consider your event a problem, solution, or something more complex? Why?

Conclusion

- We started off today thinking about the ways we are connected to water, and I want to end with an appreciation of the gifts water gives us every day. I hope this lesson helped to give you a better understanding and appreciation for your own watershed and what you can do to be a part of the solution.