



Teaching Units for High School Science Developed by
Duke University Graduate Students in Pharmacology 693/694
Master of Arts in Teaching (MAT)

<http://sites.duke.edu/rise/duke-courses/pharm-693694/>

Daily Lesson Plan

Course Name:	● Standard ○ Honors ● AP
Unit Title: Ecological Health of the Ellerbe Creek Watershed and its Environmental Implications	Day: 8 of 16
Relevant NC Standard Course of Study Goal(s):	
<p>NC SCOS</p> <ul style="list-style-type: none"> • Bio.2.2 Understand the impact of human activities on the environment • EEn.2.4 Evaluate how humans use water. • EEn.2.8 Evaluate human behaviors in terms of how likely they are to ensure the ability to live sustainably on Earth. <p>CollegeBoard AP Standards</p> <ul style="list-style-type: none"> • 4.C Naturally occurring diversity among and between components within biological systems affects interactions with the environment.. 	
Specific Lesson Objectives	
<p>Students will understand:</p> <ul style="list-style-type: none"> • Human activities (including population growth, urbanization, pollution, global warming, burning of fossil fuels, habitat destruction, and introduction of non-native species) may impact the environment from one generation to the next. • Sustainable agriculture and aquaculture practices have environmental impacts. • The development and implementation of environmental policy is a complex issue. • Humans influence freshwater availability and quality in North Carolina’s river basins, wetlands, and tidal environments. 	
<p>Students will know:</p> <ul style="list-style-type: none"> • How humans modify ecosystems through population growth, technology, resource consumption, and production of waste • That urban development in the North Carolina Piedmont leads to habitat destruction and urban runoff • Local environmental policies and organizations striving for effective conservation methods and stewardship • How humans and other species manipulate and impact freshwater ecosystems for use and consumption • How to evaluate the quality of North Carolina streams (chemical & physical properties and biotic indices) • Non-point sources of pollution 	
<p>Students will be able to:</p> <ul style="list-style-type: none"> • Develop a methodology for stream sampling 	
Key Vocabulary for this Lesson	
<ul style="list-style-type: none"> • EPA • Policy • Sustainable practices 	
Materials	
<ul style="list-style-type: none"> • Notebooks with questions for experts and for taking notes* <p style="margin-left: 20px;"><i>* We suggest having students prepare a few questions for the experts at EPA and encouraging students to note interesting things they observe or learn about on their tour</i></p>	

LESSON ACTIVITIES			
Opening (Hook, Warm-Up, Anticipatory Set, Review, etc.)			
<i>Remind students to bring a writing instrument, their questions, and a notebook.</i>			
Procedure: Include all sections that apply to this lesson; combine as necessary.			
Section	Time	What the Teacher will do:	What the Students will do:
Statement of Objective & Purpose	2	Ensure all students are present	Gather things and board bus
Input, Modeling, & Check for Understanding	90-120	Lead students through EPA, encouraging them to ask questions	Ask questions and take note of interesting and particularly relevant things.
Guided Practice			
Independent Practice/ Homework			
Closing/ Summary			
Assessment of Student Learning			
Students can be required to submit a short write-up of their thoughts or respond to a prompt.			
Differentiation Strategies*			
<i>How will you adjust aspects of the lesson to accommodate student READINESS?</i>			
Struggling Students:	Gifted/Advanced Students:	English Language Learners:	
Students can submit a drawing of a way the EPA analyses water quality, or a list of things that surprised them	Can be provided with a more challenging prompt or given more detailed feedback	Students can submit a drawing of a way the EPA analyses water quality, or a list of things that surprised them	
<i>How will you adjust aspects of the lesson to accommodate students' LEARNING PROFILES?</i>			
Interpersonal → interactions with EPA experts Visual → Touring labs and grounds of EPA Verbal → Reflection on EPA tour			