USING FIELD SCIENCE TO PROMOTE SPATIAL THINKING AND ENVIRONMENTAL AWARENESS WITH ELEMENTARY STUDENTS

DEBBIE WOOD, FIRST WARD CREATIVE ARTS ACADEMY, CHARLOTTE, N.C.

INITIAL EXPECTATIONS…

TO BUILD STUDENT UNDERSTANDING OF:

- **Watershed terms and concepts**
- **Curriculum connections**
- **Spatial thinking and mapping technologies**
- **Environmental impact issues**
- **Community partnership opportunities**

EXPLORING THE STREAM HABITAT…

<u>Habitat = 60</u>

Key Points:

- **Some riffles present**
- **Need trees**
- **Lots of sediment**

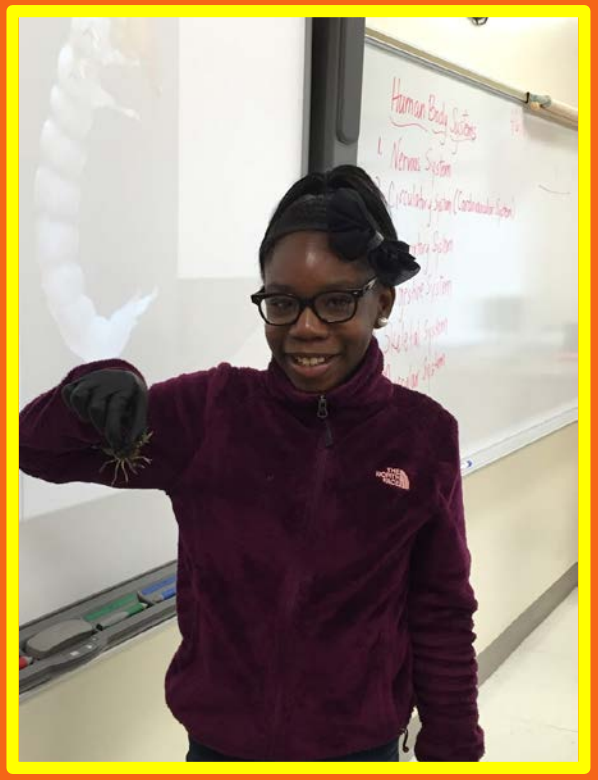
DOING SOME WATER CHEMISTRY…

Chemistry = 74

Key Points:

- **Lots of dissolved oxygen**
- **But, some coliform bacteria**

CHECKING OUT STREAM BIOLOGY…



Biology = 5.4

Key Points:

- **5 kinds of insects**
- **Lots of mayflies**
- **Found some crayfish**

LEARNING ABOUT GIS….

SURVEY QUESTIONS: WHAT IS GIS?
HOW CAN IT HELP WITH OUR PROJECT?

FALL 2015

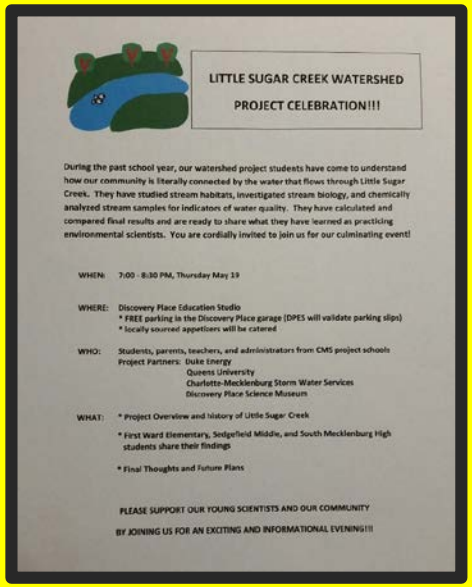
- Sorry, I don't really know.
- I do not know what that is, but I think it is good.
- I think GIS is something that helps clean streams, ponds, and lakes.
- I think it is a system to test the conditions of the water.
- I think that GIS means "Government Industrial Service" and it can help by saving water.

SPRING 2016

- GIS can be used to share data.
- It helps us pinpoint information that we need.
- It is a mapping system. We used it to find out about the other places on our watershed.
- GIS helps us connect to other people with the same problems.
- GIS stands for Geographic Information Systems. We can use it to keep studying the history of LSC.

SHARING OUR FINDINGS…

Students presented their work to a group of parents, school partners, and community stakeholders in the Education Studio at Discovery Place Science Museum.



LITTLE SUGAR CREEK WATERSHED

PROJECT CELEBRATION!!!

During the past school year, our watershed project students have come to understand how our community is literally connected by the water that flows through Little Sugar Creek. They have studied stream habitats, investigated stream biology, and chemically analyzed stream samples for indicators of water quality. They have calculated and compared final results and are ready to share what they have learned as practicing environmental scientists. You are cordially invited to join us for our culminating event!

WHEN: 7:00 - 8:30 PM, Thursday May 19

WHERE: Discovery Place Education Studio
* FREE parking in the Discovery Place garage (DPES will validate parking slips)
* locally sourced appetizers will be catered

WHO: Students, parents, teachers, and administrators from CMS project schools
Project Partners: Duke Energy
Queens University
Charlotte-Mecklenburg Storm Water Services
Discovery Place Science Museum

WHAT: * Project Overview and history of Little Sugar Creek

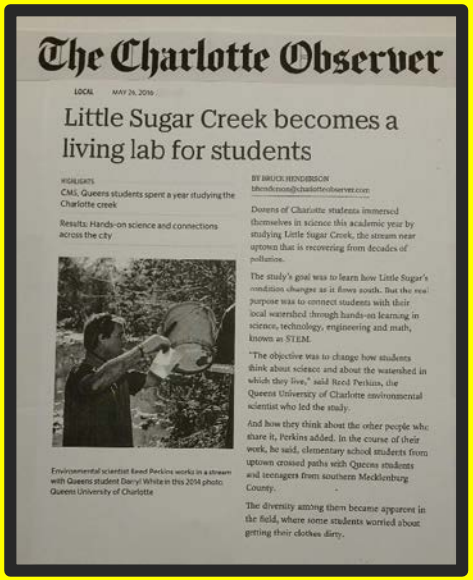
* First Ward Elementary, Sedgefield Middle, and South Mecklenburg High students share their findings

* Final Thoughts and Future Plans

PLEASE SUPPORT OUR YOUNG SCIENTISTS AND OUR COMMUNITY

BY JOINING US FOR AN EXCITING AND INFORMATIONAL EVENING!!!

Our watershed project was also featured in an article for our city newspaper, The Charlotte Observer.



The Charlotte Observer

LOCAL MAY 26, 2016

Little Sugar Creek becomes a living lab for students

HIGHLIGHTS

CMS, Queens students spent a year studying the Charlotte creek

Results: Hands-on science and connections across the city

BY BRUCE HENDERSON
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Dozens of Charlotte students immersed themselves in science this academic year by studying Little Sugar Creek, the stream near uptown that is recovering from decades of pollution.

The study's goal was to learn how Little Sugar's condition changes as it flows south. But the real purpose was to connect students with their local watershed through hands-on learning in science, technology, engineering and math, known as STEM.

"The objective was to change how students think about science and about the watershed in which they live," said Reed Perkins, the Queens University of Charlotte environmental scientist who led the study.

And how they think about the other people who share it, Perkins added. In the course of their work, he said, elementary school students from uptown crossed paths with Queens students and teenagers from southern Mecklenburg County.

The diversity among them became apparent in the field, where some students worried about getting their clothes dirty.

Environmental scientist Reed Perkins works in a stream with Queens student Darryl White in this 2014 photo. Queens University of Charlotte

PROJECT REFLECTIONS…

Our initial expectations were realized and through this project, my students experienced:

- **Motivation**
- **Engagement**
- **Cooperation**
- **Integration**
- **Connection**
- **Responsibility**
- **Critical Thinking**
- **Accomplishment**