

THE DISAPPEARANCE OF SHERWOOD FOREST: THE HISTORY OF COBBS CREEK IN PHILADELPHIA, PENNSYLVANIA

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Overview

A project on the history of Cobbs Creek Parkway in Philadelphia, Pennsylvania fits the School District of Philadelphia's curriculum for historical research. It is intended to encourage comprehension of multiple texts, interpretation of data, and chronological thinking among middle school students. In this curriculum unit, 7th grade students will engage the integration of history, math and science and expand their knowledge of these three disciplines. The unit consists of six lessons and will span two weeks. Working independently or in small groups, students will learn to analyze and diagram developments of their neighborhood's history from the 1600's to the present as they consider the environmental issues related to that history.

This Environmental Science curriculum unit was designed to bring to life the history of a familiar neighborhood park site to the middle school students at Shaw Middle School. As they learn about the history of Cobbs Creek and its tributaries, they will better understand how changes affect the lives of people in the neighborhood.

Environment and Ecology places its main emphasis in the real world. It allows students to understand how their everyday lives revolve around their use of the natural world and the resources it provides. Furthermore, as we move into a more technologically driven society, it is crucial for every student to be aware of his/her dependence on a healthy environment. The 21st century will demand a more sophisticated citizen capable of making sound decisions that will impact our natural systems forever.

Rationale

I am the Environmental Science teacher for grades 6th through 8th at Anna Howard Shaw Middle School, an urban public school in an African American neighborhood located at 54th and Warrington Avenue in Southwest Philadelphia. Shaw Middle School was built in 1922 and presently has an enrollment of 572 students. The ethnic composition of the school is 98% African American, 1% white and 1% Latino and other.

I arrived at this curriculum unit in order to engage Shaw's 7th grade students in a contextual historical perspective of Cobbs Creek, a familiar site in their own neighborhood area. Learning about watersheds is part of our environmental science curriculum and this unit will help students understand what a watershed is, consider the impact of human interaction on a watershed, identify sources of pollution, and take an active stance on preserving the environment.

Cobb's Creek is located in an urban African American neighborhood in West Philadelphia about one mile from Shaw Middle School. Geographically, the boundaries of the Cobbs Creek neighborhood are Market Street to the North, Baltimore Avenue to the South, 52nd Street to the East and 63rd Street to the West. After Cobbs Creek passes underneath Township Line Road (U.S. Route 1), it forms the border between Philadelphia and Delaware County. It later joins Darby Creek before flowing into the Delaware River.

This section of Philadelphia has much historical significance. It is: the home of the country's first watermill, a site of early American Revolution battles, the residence of the great botanist John Bartram, and the resting site for Betsy Ross. In addition to the Cobbs Creek Community Environmental Education Center and park, the community presently offers access to the city's oldest golf course, a recreation center, and skating rink.¹ Many of my students use these recreational facilities, and I want them to become more aware of their everyday environment and the importance of being informed about the issues that affect their lives. Sadly, Cobbs Creek is also the location of the infamous 1985 bombing of the MOVE compound by police. This bombing resulted in a fire that consumed two city blocks.

Historical Background

As a consultant to the Philadelphia Water Department since 1998, Adam Levine has pieced together the fascinating history of the city's many lost streams. He has supplemented the Philadelphia Water Department's historical material and published his findings online. His material coincides with the city's rich history since changes in the landscape were made as soon as the settlers began building William Penn's Greene Town along the Delaware River in 1682.² His work documents the fact that most of the city's surface streams have been channeled underground and incorporated into the city's 3,000-mile sewer system.

Histories of human settlement often overlook changes in the landscape that made settlement in a particular area possible. "Changes in topography and hydrology are usually hidden beneath the development that follows them making it difficult to discern and document," states Adam Levine.³ The infrastructure of sewers and their history provides concrete evidence of the alterations to the landscape that played an important role in the growth of the city.

Using urban streams for sewage disposal was standard practice for 19th and 20th century

engineers. The sewers were designed to carry raw sewage along with the stream flow and storm water runoff. Stream pollution and its ill affect on health was the main reason for undertaking these projects. By the second half of the 19th century, epidemic diseases such as typhoid fever killed thousands of Philadelphians. To provide proper sewerage and drainage became a topic of great concern. Consequently, city engineers began planning the culverting of creeks. They determined that the natural watersheds had to be utilized to provide proper drainage for the city. Converting many of the city's smaller streams into sewers was an integral part of their plan and draining them before they became polluted helped promote public health.⁴ The construction of sewers made it easier to subdivide land. Streets were built on top of the new sewers, with water and gas lines put in as well. New homes meant more taxes for the city. Early in the 20th century, city planners realized the benefits of creating parks in stream valleys, but it was too late for most.

The history of Cobbs Creek watershed reflects a progression from natural fields and woodlands to an agricultural and industrial era. As the history unfolds, we see the open lands once inhabited only by native peoples develop into densely built residential neighborhoods fueled by the wave of European immigrants.

Before European exploration and immigration, the Lenni Lenape Indians who used its surrounding tributaries and lands for fishing, hunting, transportation, and rudimentary agriculture knew the area of Cobbs Creek as “Karakung.”⁵ In the mid-17th century, Dutch, Swedish and finally the dominant English Quaker immigrants settled the area, which was also referred to as Mill Creek. These Europeans began wholesale clearing of woodland in the watershed, both to open up farming and pasture lands and to provide lumber for buildings in the growing city of Philadelphia. The removal of forests led to increased runoff and stream flows during storms.⁶

The Cobbs Creek area was originally farmland owned by the Cobb Family, early Quaker colonists.⁷ The neighborhood surrounding the Cobbs Creek was part of land belonging to the Hoffman family since colonial days. The area became part of Blockley Township in the 1800's. A village called Angora centered around several mills on Cobbs Creek located at the current intersection of 60th Street and Baltimore Avenue. The woods surrounding the village were known as Sherwood Forest. In the 1910's, the mills and woods were torn down to make way for houses.⁸

The Swedish settlers on Cobbs Creek built the oldest mill in Philadelphia in 1642. It stood upstream from where Woodland Avenue now crosses the creek. By the 19th century there were dozens of water-powered mills along Cobbs Creek. Powder mills and numerous textile mills existed in the watershed, with clusters of factories in the Angora section of West Philadelphia near 60th Street and Baltimore Avenue.

In his book, *Cobbs Creek*, John Eckfeldt describes the mill life as idyllic. In this valley he found nature's solitude: lovely scenery, wooded hills, running water, colorful places replete with trees, flowers and birds, and a restful spot for mind and body.

*The people who lived and worked there walked to and fro to their place of employment and life and pleasure was truly theirs in those days.... the country store was their place to assemble after the day's work was over. Here they talked and exchanged their views and gathered the news from the outer world.*⁹

Eventually, the location of the mills was found to be incontinently located. Modernization and transportation were two overwhelming factors that made it difficult to compete with mills nearer to the city. Financial matters forced managers to abandon the mills and the manufacture of cloth and yarn in this locality practically reached an end.¹⁰

Water used in various industrial processes, such as papermaking and textile dyeing and bleaching, was dumped directly back into the creek which, unfortunately, had an adverse affect on water quality and aquatic life.¹¹

Two significant factors contributed to transformation of the watershed, from scattered villages and small industrial centers into a residential area. The first factor began in the later part of the 19th century with the completion of the Mill Creek sewer in West Philadelphia. From 63rd Street and City Avenue, Mill Creek cut through West Philadelphia before emptying into the Schuylkill River at 43rd Street. The construction of the sewer in 1895 along with the filling and leveling of the valley removed this impediment to building homes. A grid of row homes was then built toward Cobbs Creek, the City's western edge.¹²

The second factor was the completion of the market Frankford Elevated Train in 1908. This allowed easy quick access into the city and quickened construction of homes in the western parts of Philadelphia. As a result, a number of Cobbs Creek tributaries were completely obliterated and runoffs were reaching the creek more quickly. Sewers from the new neighborhoods emptied directly into the creek. Pollution and erosion became two major problems.

By the 1930s, most of the mills had left the watershed. This once vibrant industrial area was left with abandoned buildings. Residential development continued to spread after World War II. Polluted storm water runoff and inadequate drainage systems were among the urban ills that took their toll on the quality of human and natural life in the watershed.

On a positive note, a number of cemetery companies began buying up large tracts of the watershed in the mid 19th century. These cemeteries served to preserve hundreds of acres of open space by keeping them out of the hands of developers. In the beginning of the 20th century, the creation of Cobbs Creek Park helped to preserve open space.

However, as a result of urbanization and misuse, Cobbs Creek is a very weakened waterway. Many city organizations have undertaken restoration efforts. These include: the Philadelphia Water Department, The Academy of Natural Sciences, the Fairmount Park Commission, the Pennsylvania Department of Environmental Protection (PADEP) and a number of regional and local watershed organizations.¹³

Cobbs Creek Community Environmental Educational Center

In November of 1991 the West Philadelphia community came together at a town meeting to consider the future of the abandoned stable building at 63rd and Catherine Streets. They decided to convert the building into an Environmental Education Center. Funding for renovations was secured from the City of Philadelphia, the Commonwealth of Pennsylvania, the William Penn Foundation and other sources. The new center, which opened in 2001, contains meeting rooms, classrooms, administrative offices, laboratories, and exhibition space.¹⁴

Recently in the summer of 2004 a new educational mural was added to the building. The artist, Paul Baker, presents a realistic urban creek ecosystem showing animal life, and native and invasive vegetation. It provides an excellent teaching tool for students.¹⁵ Plans for a computer lab and an aquarium, filled with species from Cobbs Creek, are in the making.

The CCCEEC keeps the history of Cobb Creek alive by involving the community in its many and varied programs.

Objectives

The main objective of these lessons will be to familiarize students in the seventh grade with the local Cobbs Creek area where they live. By the end of this unit students will be able to:

- Uncover Philadelphia's history in relation to Cobbs Creek
- Explain how Philadelphia and Cobbs Creek are connected
- Examine the effects of the rise and fall of industrialization on the history of Cobbs Creek
- Distinguish between the past and present appearance of Cobbs Creek
- Describe the history of the creek in the 1600's to the present
- List major transformations that occurred in Cobbs Creek beginning in the 1600's
- Understand the environmental issues that occurred in Cobbs Creek with industrial and residential pollution

Standards

The unit will help students fulfill the Pennsylvania Academic Standards in the following areas: Environment and Ecology, History, and Reading, Writing, Speaking and Listening. Details for each are in the appendix.

Academic Skills and Knowledge

While examining the history of Cobbs Creek neighborhood and uncovering the environmental issues that occurred in Cobbs Creek because of industrial and residential

pollution, students will have opportunities to develop critical thinking skills, and to interpret events from the interplay of history and geography. They will develop information literacy skills as they locate and use information from multiple sources. They will learn to test the quality of water and soil at an environmental center. For a culminating project they will design a brochure that highlights past history, present points of pride, and future plans for the Cobbs Creek area.

Strategies

As students develop awareness of how their local park and neighborhood has been influenced by the history of Cobbs Creek, they will engage in small group and whole class activities. They will use graphic organizers such as a KWL chart and a Storyboard to help them record and present information. In certain activities they will work in cooperative groups in which each member of a four-student team has a specific role. They will remain in these groups for duration of unit but change roles so each student experiences the different tasks.

In this unit students will interview a local historian during his classroom visitation. They will have an opportunity to take a field trip to the Cobbs Creek Community Environmental Educational Center. The visit to the CCCEEEEC will give students hands-on investigations of Cobbs Creek and appreciate the Cobbs Creek watershed as a living laboratory. These first hand experience will enable them to be actively involved in learning of history and its impact on the environment.

Throughout the unit students will engage in reading, writing, listening and speaking activities. Journal writing will be a component of each lesson. The creation of a brochure for Cobbs Creek will be the culminating activity that requires them to organize, evaluate, synthesize, and publish information. .

Classroom Activities

Lesson 1: Introduction to Cobbs Creek Unit

Objectives

- To become familiar with the essential question
- To understand requirements and scope of the unit

Procedure: Students will be introduced to the unit. Each student will set up a journal with criteria for journal entries and vocabulary activities. A word wall will be continuous throughout the unit for use in writing and learning key environmental terms. I will explain the portfolio requirement. It will contain a timeline of Cobbs Creek history, six journal entries, and a brochure for the culminating service learning component of the project. Students will be introduced to the essential question for the unit: *How did the growth and development of this area influence the ecological succession of Cobbs Creek?* In their journals they will record what they understand about the essential questions and what kinds of information should be included in a brochure.

Lesson 2: Introduction to Cobbs Creek Unit – one class period

Objectives

- To investigate the cycles in nature
- To understand the impact of watersheds and wetlands on people and wildlife habitats
- To examine causes and effects of pollution

Procedure: I will begin by discerning students' understanding of a watershed. We will use a graphic organizer to record:

- The definition of a watershed
- Importance of watersheds
- Water quality
- Ways to benefit rather than harm the watershed

Students will then work in cooperative groups of 4 or 5 students and they will remain in these groups throughout the unit. First they will read and discuss an article on the quantity and quality of our water supply, how water travels and how each person can become an environmental advocate for clean fresh water. The article is available from the Academy of Natural Sciences and can be printed from their website.¹⁶

Each group will look through magazines and take turns using the computer to find pictures of land use. These may include pictures of farmland, housing, roadways, recreational facilities, industrial sites, etc. Students will then evaluate a set of pictures that show the same marsh area over time from 1600's to 1980's. The set of pictures are available online.¹⁷ Each group will label pictures in chronological order and evaluate change and continuity that is represented. They will report their findings about wetlands on chart paper

Journal entry: Do you agree or disagree: Every person affects water quality in the world?

Lesson 3: History of the Cobbs Creek Area – two class periods

Objectives:

- To make connection between Native Americans' and immigrants' usages of Sherwood Forest
- To realize that the changes in the Cobbs Creek watershed continues to affect their lives even today

Procedure: Students will use a KWL graphic organizer to stimulate their thinking about the Cobbs Creek area. They will begin by listing what they know in regard to any of its history, usage, and change over time. After a brief discussion they will list what they

hope to learn in the unit. They will keep this as a point of reference throughout the unit until they will record what they have learned upon the completion of the unit.

Students will be directed to the Philadelphia Water Department Website where they will research:

- Native American occupation of land
- Scotts, English and Swede immigrations
- Control of land by English Quakers
- Mills for gun powder, textile papermaking
- Development of residential area.
- Construction of sewer
- Completion of Market Street El
- Loss industry to the area
- Establishment of Park and Cemeteries
- Move for restoration of weakened waterway

Students will then begin to create an annotated pictorial storyboard timeline to display their historical information. More time will be given as needed.

Lesson 4: Historian Visits Classroom – one class period

Objectives:

- To prepare interview questions
- To interact with Adam Levine, Cobbs Creek historian
- To consider careers in environmental science

Procedure: I will give students opportunity to prepare questions based on their previous research. Students will work in their cooperative groups to list and prioritize their questions. We will compile a list selecting a few from each group. Upon his visit, Adam Levine, historian and consultant for the Philadelphia Water Department, will speak to the class and entertain their questions. I will ask him to talk to students about careers in field of history and environmental science.

After using much of the material from his website and interacting with him in the class room, students will compose a journal entry which explains the title, “From Creek to Sewer.”

Lesson 5: Field Trip: Full day field trip

Objectives: The visit to the Cobbs Creek Community Environmental Educational Center (CCCEE) will enable students:

- To make a real world connection to a familiar park in their neighborhood
- To test water and soil quality
- To observe the watershed as a living laboratory

Procedure: Students will be equipped with boots, hard hats, masks and gloves for their activities. Next they will receive instruction about using the water quality kits. Two students will do the water quality testing, one student will be the photographer and one will record the findings.

Next students will go to the onsite environmental lab. They will make qualitative observations by using microscopes to observe microorganisms and plant life in the water. When working with soil they will look for the living organisms, plants and toxins. This will be followed by a test to determine the type of toxins.

When students return to the classroom, they will discuss results of their field trip. In their journal they will draw and label components of the park, and document the findings of their water and soil test.

Lesson 6: Creation of Cobbs Creek Brochure - two class periods

Objective:

- To recreate a Cobbs Creek brochure:
- To organize informational text
- To complete a service-learning project.

Procedure:

I will show students an existing brochure from the Cobbs Creek Community Environmental Educational Center. Together they will evaluate the existing brochure and brainstorm what kinds of information they want to be included in their versions. Possibilities are: past (some aspects of the Cobbs Creek history), present (a few neighborhood features; such as transportation, recreation, uses of land, types of buildings, and scope of the watershed), and future (restoration projects – man-made wetland, habitats and storm water runoff).

Students will work in their cooperative groups to complete the brochure. They can decide who will design, write, illustrate, and manage materials. When each group has completed their brochures, they will be copied and distributed to the CCCEE, school and community. This will serve as the service-learning project for the marking period.

Teacher Bibliography

Arms, Karen, *Environmental Science* (New York: Holt, Rinehart and Winston, 2004).

This text offers material for teacher background and gives resources for further reading, including websites for science links.

Levine, Adam. "From Creek to Sewer: History of Sewerage and Drainage in

Philadelphia” <<http://www.phillyh2o.org/creek.htm>> (2005).

Levine, Adam. “Cobbs Creek: A Brief Historical Overview”
<http://www.phillyh2o.org/backpages/cobbs_historicoverview.htm>

Eckfeld, John. *Cobb's Creek in the Days of the Old Powder Mill* (Philadelphia, 1917).
This book gives the author's personal narrative on the history of the rise and fall of mills in Cobbs Creek.

Student Bibliography

Allen, Katy (and all). *Holt Environmental Science*: (New York: Holt, Rinehart and Winston, 2002) This student text makes real world connections and includes many start up activities, pre-reading questions, and graphic organizers.

Sanera, Michael and Shaw, Jane. *Facts Not Fear* (Washington, DC: Regency Publishing, 1999).

Tiner, Ralph. *Wetland Indicators* (North America: CRC Press, 1999) This book is an excellent resource for learning the concept of wetland and methods for identifying and describing wetlands in the U.S.

Web Resources

Cobbs Creek Branch Library has information on history of the area.
<<http://libwww.library.phila.gov/branches/history.cfm?loc=COB>>

Cobbs Creek Community Environmental Education Center contains a brief history of the area and its mission to educate residents about issues affecting their environment.
<<http://www.cobbscreek.org/aboutus.html>>

Philly H₂O: The History of Philadelphia/s Watersheds and Sewers
<<http://www.phillyh2o.org/index.htm>>

Materials and Resources

Computers – at least one per cooperative group
Digital cameras - at least one per cooperative group
Chart paper
Journals – one per student
Portfolios folders -- one per student
Markers, colored pencils

Walking permission slips
Samples of Brochures

Adam Levine, Historical Consultant for Philadelphia Water Department
Besides lecturing on the subject of sewers, city drainage systems, and historical changes in urban watersheds, Mr. Levine is available for consulting and research.
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Standards

Pennsylvania Academic Standards for Environment and Ecology

These standards establish the essential elements of what students should be able to do at the completion of grade seven:

- Watersheds and Wetlands (A, B)
- Renewable and Nonrenewable Resources (D)
- Environmental Health (A, B0)
- Humans and the Environment (A, B, C, D)
- Environmental Laws and Regulation (A)

Pennsylvania Academic Standards for History

By the end of grade seven in order to meet grade eight benchmarks, students should be able to do the following:

- 8.1.6 Historical Analysis and Skills Development (A, B, C, D)
- 8.2.6. Pennsylvania History (B, C)

Pennsylvania Academic Standards for Reading, Writing, Speaking, and Listening

By the end of grade seven in order to meet grade eight benchmarks, students should be able to do the following:

- 1.1 Learning to Read Independently (A, B)
- 1.2 Reading Critically in all Content Areas (A, B, C)
- 1.6 Speaking and Listening (A, D, E)
- 1.8 Research (A, B)

Endnotes

¹ <http://www.cobbscreek.org/aboutus.html>

² <http://www.phillyh2o.org/index.htm>

³ <http://www.phillyh2o.org/index.htm>

⁴ <http://www.phillyh2o.org/creek.htm>

⁵ http://www.phillyh2o.org/backpages/cobbs_historicoverview.htm

⁶ http://www.phillyh2o.org/backpages/cobbs_historicoverview.htm

⁷ <http://www.phillyh2o.org/backpages/OverbrookHistory.htm>

⁸ <http://libwww.library.phila.gov/branches/history.cfm?loc=COB>

⁹ John Eckfeldt, *Cobb's Creek in the Days of the Old Powder Mill* (Philadelphia, 1917), p. 17.

¹⁰ John Eckfeldt, p. 18.

¹¹ http://www.phillyh2o.org/backpages/cobbs_historicoverview.htm

¹² http://www.phillyh2o.org/backpages/cobbs_historicoverview.htm

¹³ www.cobbscreek.org

¹⁴ <http://www.cobbscreek.org/aboutus.html#history>

¹⁵ <http://www.cobbscreek.org/whattosee.html>

¹⁶ <http://www.urbanrivers.org/watersheds.html>>.

¹⁷ <http://vathena.arc.nasa.gov/curric/land/wetland/marsh/pic-horiz.html>.