

Ebbs and Flows: The Schuylkill River a Symbol of Rivers Everywhere

Taylor Franko

Abstract

This curricular unit begins with a broad view of redefining a river beyond conventional means and works its way to the narrow focus of the Schuylkill River located in Pennsylvania. It challenges students views on what society considers to be nature and how it interacts with all people. Finally, the unit looks at the history of the Schuylkill River as a symbol of an industrialized polluted river which underwent a cleanup process that is still being carried out today.

Content Objectives

Problem Statement:

Teaching history often revolves around a few individuals who aided in shaping the world they lived in. Curriculum units often stray toward these people for various reasons, not least because primary sources often focus heavily on them. When units leave the figures of history and into the realm of geography, it tends to be a bare bones quick survey lesson before moving on. This leaves out a vital portion of education for students. Geography plays a heavy role in the formation and success of civilization. The standard content for mountains and rivers almost exclusively revolves around how they help or hinder humans from living in a specified area. An example of this type of content can be found in teaching of rivers. Often times, a river is taught as a means for irrigation of crops, transportation, trade, and defensive barrier. A majority of World History classes teach the four cultural hearths to develop. In teaching and learning about them a common activity is to compare and contrast the different civilizations and the rivers they live on. No matter which river serves as the focal point of the unit or lesson they are all lumped together and taught as the same body of water serving the same purpose. This is simply not true. Every river is different and what worked for people living in one area does not necessarily work for others living in a different part of the world.

For example, in Mesopotamia the Tigris and Euphrates Rivers are unpredictable and violent in their flooding, while the Nile River of Egypt is extremely predictable and less violent. This lead the different cultures of those areas to develop different methods of farming and building near the rivers so that their civilizations are not wiped out in a flood. In China, the Yellow River needed to be dredged in order to be controlled and that leads the people to cluster and develop accordingly. In fact, many curriculums ask teachers to emphasize one or two of these rivers then use them as a base for teaching the other rivers around the world which were not cultural hearths. This applies not just to the

rivers of the cultural hearths, but to all rivers of the world as each has its own unique and detailed history to learn. One such river is the Schuylkill River.

Located in Pennsylvania flowing from the mountains of central PA to its mouth in South Philadelphia the Schuylkill River flows through all the various geographies the state has to offer. Most people only learn minimally about the river, specifically the section that weaves its way through South Philadelphia before dumping into the Delaware River. The tidal Schuylkill River is much more than a leisure space and commercial resource for the people of Philadelphia. This unit looks to guide teachers to a new way of looking at and teaching the Schuylkill River to students in a history class. Instead of focusing on its development as an economic engine, it aims to help guide toward a better understanding of the river and the interactions between humans and the environment. Students should question their perception of how humans behave in the world and see if they are truly part of nature or if they simply shape it. Students look at if we are truly living in a new era the Anthropocene era. Once completed, students may see how every individual can influence the world and inversely how the world influences every individual all while using the tidal Schuylkill River as a lens to focus their studies.

Unit Objectives:

The unit breaks down into a few major objectives. First, students will be able to determine what a river actually is and how to best understand it. This asks them to scrap the standard definition and start to think critically about what a river does and how it affects the environment around it as well as the larger geopolitical picture. Next, they will take that new definition and try to apply it to various rivers around the world. Second, students will begin to question what is nature and hopefully begin to realize that even metropolitan areas are part of nature. They need to analyze why rivers and wilderness areas are commonly thought of as nature why cities are not. It asks students to look within themselves to judge whether or not society has over simplified the roles of humans and nature. They achieve this by discussion and reflections within the unit about and around various sources covering humans and nature. It aims to get students questioning the standard norms set for them.

Third, students will be able to evaluate the geopolitical influence the Schuylkill River played in the development of Philadelphia and Pennsylvania. The third objective is by far the narrowest and asks students to study and attempt to understand the role the Schuylkill River played in the development of Pennsylvania and the environment as a whole. Students will study how industrialization hit the area and what affects that had on the Schuylkill River, as well as the efforts made to fix mistakes of the past.

Content Objectives

The goal of this unit is to help broaden the understanding of rivers in the world by starting with a general understanding of what a river is and how it is defined. Thus, it is imperative to begin with an understanding of what a river is and how it is defined in the most common sense, a simple blue line on a map and source for water. Beyond the definition of a river, this unit narrows in and focuses on specific rivers. The most specific cases involve the tidal portion of the Schuylkill River in Philadelphia.

The complexity of rivers provides an excellent starting point for this unit. In order to properly to properly teach about rivers they first need to be understood. For much of history rivers have been defined simply as a line on the map where water is. As Dilip Da Cunha states, "More fundamentally, this line calls out a unique entity that can be named, touched, represented, engineered, but above all believed to exist" (Da Cunha 3). A marked line allows people to give rivers names and better grasp what they are. This is because people often want or feel a need to give rivers proper barriers or areas of flow, which can be defined by banks and other areas humans worked developed along the river. Human development of the river includes property lines and artificial dams along with extended banks to control flooding. Da Cunha claims that the line on a map makes it much easier for people to grasp what a river actually is, however this needs to be modified and updated as rivers are more than a simple line. In India, the Ganges River is a great example of how a line does not help define the river. In relation to India, Da Cunha's ideas of lines defining rivers do not work "But they do not work everywhere and at all times, especially in places of rains like those that come with the monsoon, places like India" (Da Cunha 10). The Ganges often floods when monsoons hits and dries up as the rainy season wanes. A line simply cannot capture how much change happens to this river over the course of a year. Sometimes it is overreaching the claims of the line, while other times it does not even meet their minimum boundaries. This constant change shows the addition or subtraction of rain affects how much and where a river flow. Understanding what a river actually is and that it cannot be simply defined by a line on a map is the first key step to best teach their uses in history.

Most social studies and history classes teach about rivers in a similar manner. Da Cunha outlines the basics of this "Thus rivers as "flows of water" are readily appreciated for draining land and providing it with transportation corridors, energy, water supply, waste disposal routes..." (Da Cunha 9). History classes often agree and teach every river in the same general terms here. While rivers most certainly do provide these benefits for human civilization, it must be noted, as Da Cunha urges, that not all rivers could fit this model. Students need to understand that rivers can share similar aspects, such as transportation and water supply, however how much each provided varies widely

dependent upon where in the world the river is and which civilizations developed along it. Some rivers such as the Nile flood predictably each year and thus make it easy for Egyptians to prepare and modify their lives accordingly. On the other hand, the Tigris and Euphrates rivers of Mesopotamia flooded unpredictably and violently which in turn made it harder on those civilizations and required different management techniques. Another example of a river with different characteristics is the Yellow River in China. According to ancient sources, a legendary figure Yu managed to dredge the river and thus become king. Recently, a scientific team studied the great flood of history and found it to most likely happened, but at a different time than originally thought

“If the Jishi Gorge outburst flood of ~1920 BCE is the natural cataclysm that came to be known as the Great Flood, then we can propose a new beginning date for the Xia dynasty, ~1900 BCE. This date, some 2 to 3 centuries later than previous reckonings.” (Wu et al)

The Emperor Yu managed to figure out a way to dredge the river and control some of the flooding, which in turn led to his power grab. These three rivers play an important role in what historians call the cradles of civilizations. All three rivers helped the people near them, however each required a different approach and certainly showed they are more than a mere line on a map to be looked at and named. This trend can continue through history with different rivers in different locations. It becomes clear that limiting a river to its drawn boundaries is not the proper way to teach them in class, but rather to understand they can provide similar advantages while still being completely different to each other.

Rivers played and still play an important role in geopolitics. They provide a clear barrier for states and countries to determine borders. Throughout history, countries used rivers to define their territory or to set limits on expansion. In the United States prior to independence, the British territory spread from the Atlantic Ocean west to the Mississippi River. While the Mississippi served as the western boundary, it did not consider the native population already living there and once settlers began expanding toward the river war became inevitable. The American colonies provide one example of rivers and the conflicts that arise around them when used to define territory, but are by no means the only case. Nature and politics do not always mix as Marisol De la Cadena notes in her *Indigenous Cosmopolitics* “According to the modern order of things science and politics are to each other like water and oil: They do not mix. The first stands for objective representation of nature, while the second is the negotiation of power to represent people vis-a-vis ‘the state’” (De la Cadena 342). She argues that governments and the populations within them keep science and politics from crossing over. This shows up with rivers all the time. People use rivers for boundaries and resources for life, however politics does not always consider the native populations residing on the river. These native populations include indigenous peoples as well as the natural plant and animal life. De la Cadena

argues that the politics becomes about people seeking representation in some form of state and often detaches itself from nature. Unfortunately for the indigenous populations who lived along the river they are often not regarded in the greater political game unless they assimilate into the dominant culture of the country their land lies in. They become the unheard voice and sadly they often are the ones that might be considered the closest to nature since they do not live in the sprawling metropolises. Without their voice it becomes the burden of the politicians and policy makers to determine what is a river and how to define nature for their particular country or territory. Lines on a map separate countries and territories from each other, however a widely held belief is science goes beyond those lines. Science receives a reputation of being objective and universal, however the interpretation of science is not. A scientist may claim a river includes all the areas of the floodplain and even beyond, but a politician may argue against it if that definition were to reduce the amount of territory he or she controlled. This loggerhead leads to many debates and arguments about what is nature or a river and what is not. Many states tend to lean toward defining nature as beyond the realm of people. In a world where everything is connected and people find themselves all over it is becoming harder and harder to accept that. Nature encompasses the entire planet cities and developed areas included. The separation of the two creates problems for students trying to learn in an urban environment.

The view of nature and what that consisted of by humans varied throughout history and location. A commonly held view of nature for the American Colonists about 250 years ago was that of a barren or savage place, while at the same time the Native American population saw nature differently. Native Americans relied on nature for life and respected it. This respect led them to view nature as a bountiful place, which in turn led it to be seen as life giving the opposite of colonists. Each nation believed differently about nature, however a few commonalities appear between them. The most common of those beliefs revolved around the role of human's role on the planet. Annie Booth in her article *We Are The Land: Native American Views on Nature* states "The Earth is, in a very real sense, the same as our self (or selves)" (Booth). Most of the American Indian nations believed nature encompassed everything on the planet including themselves. While nature included everything, Native American tribes believed in the use of nature and its resources. Their idea of use differed from Europeans in that the Europeans sought to control and exploit nature for economic gains in the age of imperialism. Their opposite views collided in the territory that would become the United States through the next three centuries.

Prior to European arrival in the area that would become Philadelphia the Lenape Indians lived throughout the area. These people used the river as a resource for life where they fished and travelled along the Schuylkill and Delaware Rivers. Their mastery of life

along the rivers would eventually bring them into contact with the European settlers. Contact with Europeans shifted Lenape culture in multiple ways. Since they did not hunt outside their territory the Lenape were seen as poor for the Europeans, but they did shift and start planting more maize in order to make some profit off the new arrivals. (Lower Merion historical Society) The biggest shift came with the arrival of a single man, William Penn, who upon the founding of his city at the meeting point of the Delaware and Schuylkill Rivers, forged a Treaty of Friendship in Shackamaxon with the Lenape tribe who originally inhabited the area. The treaty included a section “the assumption that the rivers and creeks of Philadelphia would always run” (Philly H20). As time proved, Penn's’ treaty was unique to relations with Native Americans. He considered their ideas and made sure to attempt to keep the waterway flowing. He worked an appreciation of the water into an official treaty in what seemed to be a big step toward a positive relationship between different peoples. Lenape worked out trade deals with Penn for more of their lands and were able to keep their way of life in tact just further upstream along the Schuylkill.

Over time the Lenape tribe moved west for a multitude of reasons. They lost to Europeans in war, disease ravaged the native population weakening them, colonists settled on their unused land, and the allure of possible profits from the fur trade forced them to assimilate into colonial society. After the native population was forced out of the area, industrialization began to take hold. The primary use of the river had been for transportation of furs and goods, or fishing, until the turn of the nineteenth century changed all that. Industrialization hit and the Schuylkill river area boomed. Factories, rail yards, slaughterhouses, and coal depots sprung up all around. The river provided a swift way to move the new natural resources the country greedily demanded. (<http://paconservationheritage.org/stories/schuylkill-river-river-of-revolutions/>) The shift from noninvasive nonpolluting use of the river to a more invasive and polluting was jarring. Prior to the need for coal much of the river continued to run as Penn agreed in his treaty, once the need for coal and other natural resources hit the area that all shifted as industrialists began to shape the river to their needs and not show any inclination they cared about the natural life around it.

During the industrial revolution a clear difference can be seen in how nature and natural resources were viewed by the American populace. No longer did the Lenape Tribe view of only using what resources were needed to survive hold, the exploitation of the land by industrialists to earn a massive profit became apparent everything went into excess. Pennsylvania coal mining serves as a great example of how industrialization changed Americans view of nature. In Pennsylvania at its height about 90 million tons of coal processed in the Susquehanna Valley (Marsh, 1987). In order to access that coal, mine companies used two distinct methods. First, companies dug deep mine shafts in

the ground with interconnecting tunnels and sent groups of miners down with pick axes to dig the coal. Second, companies used strip mining where they rip up the top layer of ground to mine the coal right near the surface. This strip-mining method leaves an ugly scar on the mined land (Marsh, 1987). Coal companies began to pillage the land for a specific resource with no regard to appearance or functionality of anything living or not that occupied it beforehand. Once coal mines ran out of coal, companies abandoned the mines and towns leaving scars on the land. Strip mining and the coal industry are only one specific example of the change in American values on the land. Specifically, in Pennsylvania the Schuylkill Rivers' waters became polluted and dirty as the nineteenth century turned into the twentieth.

Industrialization hit the Schuylkill hard for a few reasons. As with most things location played a very important role. The intersection of the Delaware and Schuylkill Rivers provides an excellent point to load up the major resource of the industrial revolution, coal. Anthracite coal from northern Pennsylvania came right down to Philadelphia where it would be loaded up for shipping, or to be used in the factories. During this period any idea of the river being something to be respected and cared for as the Lenape had thought seems to disappear. Runoff and pollution clogged up the river and changed its color to a dark silt. (<https://www.schuylkillbanks.org/history>) In order to navigate the river, engineers created a series of dams which created river pools. River pools collected the runoff, which contained high levels of aluminum, magnesium, and sulfur among other harmful chemicals. Not only did harmful chemicals bleed into the waterways and soil but remains of coal continued to pile up near the mine sites. Abandoned mines and towns created more than an eye sore the on Pennsylvania landscape. Large underground mine shafts left unstable ground above limited access and usage of land for the remaining populace. Ripped up strips of coal stood out like an open wound on the countryside. All the runoff began to change the color of the river from natural to a non-natural reddish tint. Changing water color became a glaring neon sign to conservationists and everyday Pennsylvanians something needed to be done.

However, as the twentieth century progressed Americans began to rethink nature and how they treat the resources in it. Efforts to protect and clean up the Schuylkill were undertaken. In 1947 a project to restore the Schuylkill began. This restoration was not to bring it back to the standards and condition of pre-industrialization, rather it attacked the water quality issue. "For the Schuylkill River Project, improving water quality in the river simply meant getting the silt out." (Towne 147). Pennsylvania stated the aim of the project as simply to get silt out and improve the quality. At the time, nobody knew what a water restoration project would, could, or should be. Singling out an aspect and attempting to fix it began a process that is still operating today. Pennsylvania's project began a shift in how rivers are viewed by people in the country. By taking the

Schuylkill's heavily polluted waters and beginning to treat them they opened the door for other states to follow their lead.

Beginning with the late 40's effort to revitalize the Schuylkill, many efforts followed suit. The clean-up of the river is a major success story for conservationists and the people who live, work, and play along or on it. "The joint state and federal Schuylkill River Project accomplished the removal of several Schuylkill Navigation dams and approximately 20 million cubic yards of sediments from the river as well as the construction of three desilting pools." (Towne 169) Since the Schuylkill was one of the dirtiest rivers around the fact it had a successful cleanup cannot be understated. While a return to the pre-industrial levels was always unlikely and near impossible, the fact the project restored faith and a level of decontamination to the river is remarkable. As Towne states, perhaps the most important part of the project is not the accomplishments but the symbolism "a break with the past and a change in the way Pennsylvania's rivers would be treated." (Towne 169) As the poster child for a contaminated industrial river, it seems only fitting that the Schuylkill lead the way for cleanup policies and procedures for the rest of the rivers in the state. It remains important to keep the river clean and as unpolluted as possible for it provides plenty to people all throughout Philadelphia. America and the world shifted from coal driven industries to a petroleum driven one, which in turn became a major benefit to the Schuylkill cleanup effort. More recently the Schuylkill River received another shot in the arm for cleanup. Starting in 2003 the EPA and Schuylkill Action Network (SAN) began a cleanup effort around New Philadelphia in Schuylkill County. The abandoned Silver Creek Mine leaked out tons of acidic waters into the river for decades. In order to clean up the acidity of the water they began to create a series of passive treatment ponds which treat and clean roughly 1,200 gallons of water per minute. (EPA) Again the effort at the Silver Creek Mine did not aim to bring back pre-industrial levels, simply it seeks to bring the water to a neutral pH level. Continued cleanup of what was once the dirtiest of America's rivers shows the progress being made in the environmental realm.

Human impact on the environment has led scientist to reconsider the geologic era currently happening. Because humans have so heavily affected the environment many believe that a new era has dawned called the Anthropocene. The main defining characteristic of this geological age is human activity being the dominant force behind changes in climate and the environment. (<http://www.anthropocene.info/>) Humans change of the world may not have a definitive start date, but it is more obvious than ever to see how they have changed the world. Look at the mass urban cities and factories that sprung up all over the world and now the effects of their operation are being felt in the climate around. This era can be seen in a microcosm case study of the Schuylkill River. The pollution and ongoing cleanup of the river show the ability humans have to affect the environment both positively and negatively.

The role of rivers in history is a complicated one. Often seen as just lines on a map or resources needed for people to survive, they usually are oversimplified. Rivers throughout the world vary, some more violent and unpredictable than others in terms of flooding and the benefits of each are not universal. It becomes important to define nature as more than the untouched by man woods and rivers, but rather all of the world including urban areas. People have long had different views on what is nature and how to use the resources it provides. The Schuylkill River specifically the tidal portion in Philadelphia seems to have lived many different lives. It survived the oncoming of industrialization and extreme pollution that followed, then managed to serve as a beacon of hope as it underwent a massive cleanup effort spanning decades. A truly remarkable river that encompasses and demonstrates the different purposes and history that developed along the fresh waterways of the world.

Teaching Strategies

This unit uses a wide variety of teaching strategies in order to best engage student participation and production. Each of the lessons and strategies help accomplish the objective of the lesson as well as tie into the state and national standards. A common strategy that weaves throughout the entire unit is direct instruction. Direct instruction serves as a basis for notes and an excellent way to present large amounts of information quickly to students. It pairs perfectly with the Socratic method to keep students engaged in a discussion while also getting everybody up to speed and on the same playing field.

Large and small group work provide the other backbone to the unit. Students need to be able to work to flesh out ideas and get deeper into a discussion. The best way is to start with a small group or partner pairing and continually add people and ideas to the discussion until it becomes the entire class. This strategy fits perfectly with students trying to figure out how humans change the environment. Each student brings a different perspective with them about how people affect the environment and what constitutes the environment. As an educator the goal is to get students to drive their own instruction forward and the best way to do that is give them a little guidance and sit back and moderate group discussions and work.

In order to assess student progress, the unit requires a few formative assessments along the way. Students need to complete guided works to show

they participated in group work and add in their own thoughts to be sure they did not just become copy zombies. The paperwork holds every student accountable for their own grade, however should not be the biggest formative assessment in the unit. Student participation and discussion of topics is far and away the best judgement of their understanding of the content. If they engage in discussion and provide their own opinions or even try to help a fellow student out in an argument, that shows their level of comprehension. A major standard of the unit is to judge how scarcity plays a role in decisions people make. Once the unit shifts toward the Tidal Schuylkill River, students will narrow in on this specific case and how local decisions are made and affect their lives based on what is around them in Philadelphia.

Due to being located extremely close to the Tidal Schuylkill River the unit relies upon a trip to trail along the river to help students grasp a better understanding of the river they are talking about. If school is not located in a close enough proximity, there exist a plethora of websites that show video tours along the river and serve a similar purpose. The main goal of the trip is to have students experience first-hand the topic they discuss. All too often students in history class must suffer through documentaries and museum tours of “dead” objects and time. Those do serve a purpose, but do not pack the punch of getting to see the actual topic as it is today in action like a trip to the river would. Many urban students may even have seen or been on the river, but once they start to discuss the unit they can then realize where certain decisions were made and perhaps even why depending upon the landscape. Hopefully, students recognize the flood plain or just certain areas that flood and can better understand the opening to the unit on why rivers are more than just blue lines on a map.

Video instruction adds another layer to the unit. Students succeed at a higher rate when they can visualize the material they are learning. Watching a video with guided notes helps focus students to the important information while still allowing them to absorb information from a different medium than a teacher.

Classroom Activities

Lesson outline

Lesson 1

Class	World History All Sections
Topic	What is a River
Objectives	SWBAT analyze what a river is IOT better understand geography SWBAT debate what is nature IOT better understand the world they live in
Instructional Strategies	Discussion Note taking direct instruction Guided Inquiry Reading and annotation

<p>Daily Activities</p>	<p>Do Now What is a river? How do we determine where it is?</p> <ul style="list-style-type: none"> · Tailor the discussion of a do now to have students decide it is a line on a map or within its banks only. <p>Group Activity</p> <ul style="list-style-type: none"> · Group up students and have them look at a map with a river marked on it. (this can be any map from anywhere) · Have each group try to determine where they think the boundaries of the river are · Have them explain why they made that determination in writing · They should write out their answers in their notebooks under the do now <p>Direct instruction/guided notes</p> <ul style="list-style-type: none"> · Use PowerPoint (create one based on your students previous knowledge) to guide students through common definitions of a river · Guide toward rivers in areas of constant rains which do not always sit in their banks. · Include a portion on why politics plays a part in the determination of where a river extends to <p>Video</p> <p>Show youtube video https://www.youtube.com/watch?v=ButQspZX2yA Video covers watersheds and such. Ask how we can define a boundary for such loose concepts.</p> <p>Wrap up discussion</p> <p>Ask students if they still think a river is located between it's banks as a line on a map Foster discussion to determine if they can come up with a class definition. This will vary between different classes</p>
<p>Assessments</p>	<p>Exit ticket: What is a better definition of a river and nature? Have students turn in</p>
<p>Materials</p>	<p>Smartboard or Projector. Notebooks. Writing Utensils. Print out Maps. PowerPoint on intro of rivers.</p>

Standards	<ul style="list-style-type: none"> · 8.4.9.A: Analyze the significance of individuals and groups who made major political and cultural contributions to world history · 8.4.9.D: Analyze how conflict and cooperation among social groups and organizations impacted world history through 1500 in Africa, Americas, Asia and Europe. · 7.1.W.A Use geographic tools to analyze information about the interaction between people, places, and the environment.
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Lesson 2 Schuylkill River and Industrial River

Class	World History All Sections
Topic	Case Study: Schuylkill River
Objective s:	<p>SWBAT evaluate the importance of the Schuylkill River in the development of human civilizations in the region IOT compare with other centers of human development</p> <p>SWBAT compare the Lenape and Industrial usage of the River IOT analyze the change in use of resources through time</p>
Instructional Strategies:	<p>Guided readings on Schuylkill River</p> <p>Comparison discussion after</p> <p>Mini “project”</p>
Daily Activities:	<p>Do Now - Shown a topographical map of PA ask, why does the Schuylkill River become important in history?</p> <p>Try to guide students to see how much access it gives to the state from mountains to Delaware River, thus the Atlantic beyond</p> <p>Guided Reading-individual</p> <ul style="list-style-type: none"> • Students receive reading on native americans and their use of the land specifically the Lenape

- I suggest using <http://www.lowermerionhistory.org/texts/first300/part02.html> as a resource for this portion
- Scaffold the text as needed for students
- Discuss after time for reading has completed on Lenape use of the river

Guided Reading two - individual

- Industrial use of the river
- Scaffold as needed for students
- I suggest using https://www.bucknell.edu/Documents/EnvironmentalStudies/Anthracite_coal.pdf as a resource
- Discussion after as a whole class on this reading only
- Make sure the difference in treatment of land and resources comes through

Group Comparison discussion

- As a group have them compare
- Point out positives in both to keep it fair
- Ask why was there such a change?
- What allowed Europeans/Industrialists to be okay with the change?

Small Group mini “project”

- After the large group discussion and readings split class into small groups
- Using what they just read and discussed give them the following task
 - They need to develop a plan to gather necessary resources for industry and civilizations growth using the Schuylkill River, without over polluting the waters
 - Big condition is they are in 1904, thus they must use that time periods technology.
 - No cars, coal is the biggest source of energy, etc...

Assessment:	Their scaffolded answers to guided readings. Group conversations in the discussion sections Their plan in the mini “project”
Materials:	Copies of readings you want to give with scaffolded questions for your students. Smart board or maps for visuals.
Standards:	<p>8.4.9.A: Analyze the significance of individuals and groups who made major political and cultural contributions to world history</p> <p>8.4.9.D: Analyze how conflict and cooperation among social groups and organizations impacted world history through 1500 in Africa, Americas, Asia and Europe.</p> <p>7.3.9.A Explain the human characteristics of places and regions using the following criteria:</p> <ul style="list-style-type: none"> • Population • Culture • Settlement • Economic activities • Political activities

Lesson 3 field trip or virtual tour. *Due to the fact, the Schuylkill and Delaware Rivers are conveniently close and an easy trip this lesson will be written as a field trip to them. However, if they are not practical for a trip any virtual tour can be used to accomplish the objectives of this lesson. Google Earth is a great starting point for the virtual tour.

Class	World History All Sections
Topic	Trip or Virtual Tour
Objectives:	SWBAT analyze the Schuylkill River and determine what actually constitutes the river IOT understand the world we live in today.

Instructional Strategies:	Trip to location/ virtual tour of River area Complete activities while on trip
Daily Activities:	Complete activities outlined in trip handout. ** This is attached to this unit on the next page
Assessment:	Completed trip handout activity
Materials:	Handout and writing utensils. For virtual tour computers or smartboard are needed
Standards:	7.1.W.A Use geographic tools to analyze information about the interaction between people, places, and the environment. 8.4.9.A: Analyze the significance of individuals and groups who made major political and cultural contributions to world history

Class	World History All Sections
Topic	Clean up of the Schuylkill
Objectives:	SWBAT determine how the clean up of the Schuylkill River impacted US conservation IOT see change in values on land
Instructional Strategies:	Discussion Videos Online readings
Daily Activities:	<p>Do Now How do we clean up a “dirty” river? What can be done? How do we measure if it’s clean or not?</p> <p>https://www.youtube.com/watch?v=1K1IpdYHyM8 9 minute video to show a modern clean up after a storm.</p> <p>Group Activity Reading</p> <ul style="list-style-type: none"> • Students read an excerpt of Towne’s book on the Schuylkill • Determine why Pennsylvania wanted to clean up the Schuylkill • They need to suss out why the Schuylkill symbolized the nations rivers in the 1940’s-50’s <p>Group Activity</p> <ul style="list-style-type: none"> • Students are to use the internet to go to https://www.schuylkillbanks.org/plans-reports and determine what is still to be done to the river. • Do they think it will be productive and successful why or why not • What can they do to help, even if they are not going to physically get in and clean up the river.

Assessment:	Reading discussions and answers
Materials:	Computers, smartboard, paper
Standards:	<p>8.4.9.A: Analyze the significance of individuals and groups who made major political and cultural contributions to world history</p> <p>8.4.9.D: Analyze how conflict and cooperation among social groups and organizations impacted world history through 1500 in Africa, Americas, Asia and Europe.</p> <p>7.3.9.A Explain the human characteristics of places and regions using the following criteria:</p> <ul style="list-style-type: none"> • Population • Culture • Settlement • Economic activities • Political activities

Resources

Bibliography:

The suggested readings for this unit are:

- *U.S. Department of State*, U.S. Department of State, history.state.gov/milestones/1750-1775/proclamation-line-1763.

Office of the Historian gives government account.

- Cadena, Marisol de la, and Mario Blaser. *A World of Many Worlds*. Duke University Press, 2018.

Wonderful for a look at nature and it's role in politics, focuses on South America but applies to all.

- Cronon, William ed., *Uncommon Ground: Rethinking the Human Place in Nature*, New York: W. W. Norton & Co., 1995, 69-90.

Explains the views of nature of the Europeans as they came over to the Americas about 250 years ago.

- Cunha, Dilip da. *The Invention of Rivers: Alexander's Eye and Ganga's Descent*. University of Pennsylvania Press, 2019.

A new look at how to define a river. Provides backbone for new idea of what a river is.

- Marsh, Ben. "Continuity and Decline in the Anthracite Towns of Pennsylvania." *Annals of the Association of American Geographers*. 77. no. 3 (1987): 337-352.

Anthracite coals impact on the land of Pennsylvania and specifically the Schuylkill River as well

- "Philly H2O: Home Page." *Philly H2O: Home Page*, www.phillyh2o.org/.

Good resource on what is happening with Philadelphia's water and plenty of maps.

- "Pre-History to 1854." *Pre-History to 1854 | West Philadelphia Community History Center*, westphillyhistory.archives.upenn.edu/history/chapter-1.

Excellent archives for actual stories along the Schuylkill River in Philadelphia.

- "Schuylkill River: River of Revolutions." *Conservation Heritage*, paconservationheritage.org/stories/schuylkill-river-river-of-revolutions/.

Brief information on the history of the Schuylkill River. Excellent for short in class readings

- "Schuylkill River: River of Revolutions." *Conservation Heritage*, paconservationheritage.org/stories/schuylkill-river-river-of-revolutions/.

Describes how conservation is going and how it came about.

- "The Beginnings." *The First 300: The Amazing and Rich History of Lower Merion (Part 02)*, www.lowermerionhistory.org/texts/first300/part02.html.

Great website for information on the Lenape Tribe and their use of the Schuylkill River.

- Towne, Chari. *A River Again: the Story of the Schuylkill River Project*. Delaware Riverkeeper Network, 2012.

Fantastic resource for how the Schuylkill River went from river to polluted to attempted clean up.

- Wu, Qinglong et al. "Outburst Flood at 1920 BCE Supports Historicity of China's Great Flood and the Xia Dynasty." *Science*. 353.6299 (2016): 579–582. Web.

Article explains the how their might have been a Xia Dynasty legendary emperor and further explains how they controlled the Yellow River.

Appendix

Standards:

Ideally, this unit belongs in a History of Philadelphia class; however, it is not exclusive to that. It can be taught in a World History, US History, or Civics class as well, thus a wide variety of Pennsylvania teaching standards are covered in this unit. Some of these standards may fit directly to the aforementioned classes but others fit a broader view, such as the geography standards.

7.1.W.A Use geographic tools to analyze information about the interaction between people, places, and the environment.

7.3.9.A Explain the human characteristics of places and regions using the following criteria:

- Population
- Culture
- Settlement
- Economic activities
- Political activities

These two standards are geography standards which cover a wide variety of topics. Both standards focus on the relationship between the environment and humans in some form. Hopefully, students question the separation of humans and environment implied by them.

6.1.C.A Predict the long-term consequences of decisions made because of scarcity.

6.4.W.C Compare the role groups and individuals played in the social, political, cultural, and economic development throughout world history.

The world history and economic standards listed above cover the part of the unit which studies consequences of humans on the world. Long term decision making directly affects the river as well as the individuals or groups who fight on both sides of the issues.

** Trip Handout

Name _____ Class Period _____ Date _____

1. List out the first 5 observations you made as soon as you saw the Schuylkill
 - a.
 - b.
 - c.
 - d.
 - e.

2. Compare your observations with 3 students around you. What did you notice about all your observations?

3) What are 3 ways you notice humans have impacted or changed the Schuylkill?

1

2

3

4) On the back sketch out the river you see. Include its banks and the area around the river.

5) On your sketch, indicate where you think the water might reach if it floods using a dotted line.

6) Can we define a river as just a blue line on a map? Why is it important to acknowledge rivers are more than just the boundary lines given on a map?