

Fairmount Water Works: An International Urban Model



Component	Description
Title of Lesson	Fairmount Water Works: An International Urban Model
Content/Subject Area	U.S. History
Context	<p>As a result of the Yellow Fever epidemics throughout the 1790s and early 1800s, Philadelphia organized an effort to establish the first public water system in an American city. What resulted was the Fairmount Water Works, built by the famous Benjamin Henry Latrobe.</p> <p>In 1798, when Philadelphia first organized the Watering Committee to find a way to supply the city with pure water, Americans were very aware of the adverse effect urban development had on water supplies of Europe. London was struggling with the pollution of the Thames. In fact, Philadelphia had already started to pollute the Delaware River. Consequently, there was a conscious decision to bring pure water of the Schuylkill River into the city.</p> <p>City fathers called upon Latrobe, the engineer and architect who later became known for his work on the United States Capitol, for his advice. Latrobe was in Philadelphia at the time (1798) to build the Bank of Pennsylvania, whose design has been called the first monument of the Greek Revival in America.</p> <p>Latrobe's first plan, a neoclassical structure at Centre Square (the location of City Hall today) housed a steam engine, boiler, and pump. That building quickly proved inadequate to serve the needs of a growing city. In 1811, Latrobe's assistants, John Davis and Frederick Graff, proposed construction of a new pumping station on the banks of the Schuylkill River.</p> <p>The Fairmount Water Works opened in 1822, just outside city limits in the district of Spring Garden. People came from around the world to view this technological achievement amidst its magnificent gardens.</p> <p>The Fairmount Water Works illustrates the romantic concepts of the era and was celebrated as a prime example of the blending of</p>

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	<p>nature and technology. By the 1840s the clean, neoclassical architecture of the buildings, the landscaped garden, and the promenades up to and around the reservoirs on “Fair Mount,” as the rise was identified on an 1687 map of Philadelphia, were all major attractions. Ornamental sculptures, fountains, and airy gazebos added to the visual pleasure of the site. For the general public as well as for those with engineering or technical interests, the technological components at Fairmount made the Water Works a unique wonder-- the turning of massive waterwheels, the action of the powerful pumps, and the sparkling reservoirs containing the city’s water supply. The Fairmount Water Works was an exciting place to visit for locals and for visitors from around the world.</p> <p>In his <i>American Notes for General Circulation</i>, Charles Dickens recorded his 1840 visit to Fairmount:</p> <p><i>Philadelphia is most bountifully provided with fresh water, which is showered and jerked about, and turned on, and poured off everywhere. The Water-works, which are on a height near the city, are no less ornamental than useful, being tastefully laid out as a public garden, and kept in the best and neatest order. The river is dammed at this point, and forced by its own power into certain high tanks or reservoirs, whence the whole city, to the top stories of the houses, is supplied at a very trifling expense.</i></p> <p>By the 1830s Fairmount had become the prototype of a water-supply system for growing urban areas in the United States and abroad. Graff acted as consultant for more than thirty-seven other water works. In 1844 the system supplied an average of 5.3 million gallons of water per day to 28,082 households, expenditures were \$29,713, and the revenue into the treasury was \$151,501.</p> <p>From 1815 to the consolidation of the city with its districts in 1854, Fairmount Water Works was the sole pumping station supplying Philadelphia with water. Although technological improvements were made with the installation of water turbines beginning in 1851, Fairmount Water Works began to deteriorate by the 1880s. River pollution reached untenable proportions in the 1890s, and the facility was decommissioned as a pumping station in 1909.</p> <p>2-3 class periods</p>
Duration	
Objective	SWAT discover the history and importance of Philadelphia’s water system IOT compare it to another World Heritage City’s public water system.

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<p>Standards</p>	<p>PA Academic Standards 8.1.9. A Analyzes chronological thinking 8.1.9.B Analyze and interpret historical sources 8.2.12.B Evaluate impact of historical documents, artifacts in PA which are critical to U.S. history</p> <p>CCSS.ELA-LITERACY.RH.11-12.1 Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.</p> <p>CCSS.ELA-LITERACY.RH.11-12.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.</p> <p>CCSS.ELA-LITERACY.RH.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.</p>
<p>Anticipatory Set</p>	<p>•Have students watch the History Making Production of <i>Fever: 1790-1820 (Philadelphia: The Great Experiment)</i>, approximately 30 minutes (YouTube Video https://www.youtube.com/watch?v=P7L5ollfYcl&list=PLwEWxvgiPVsUAipsMi-beFNyn7dQ6UEza)</p> <p>AND... History Making Productions' brief webisode, The Waterworks, First in the Nation (8:47 minutes) https://www.youtube.com/watch?v=UljN8JwR1jU)</p>
<p>Direct Instruction</p>	<p>•Review the film's highlights. What were the causes of the continuous Yellow Fever epidemics? What were the race issues? Political issues? Medical issues? •Show the 16-minute film, Fairmount Water Works, shown at the Water Works Interpretive Center. It provides an interesting history and description of the Fairmount Water Works. https://vimeo.com/95017596)</p>
<p>Guided Practice (and/or Cooperative)</p>	<p>•Create a fact sheet (5 Ws) on the Fairmount Water Works by having students brainstorm information from the videos. Post.</p>

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<p>Practice)</p>	<p>•Distribute copies/post copy on smartboard of article, <i>Cool, Clear Water: The Fairmount Water Works</i>.</p> <p>(http://pabook2.libraries.psu.edu/palitmap/FairmountWW.html)</p> <p>This is a brief, clearly written overview of the Fairmount Water Works. Have students read and highlight major aspects of the rise and fall of the Water Works. It is suggested that students create a timeline.</p>
<p>Independent Practice</p>	<p>Divide class into teams, or students may work independently. One team will research Philadelphia's water supply past and present. This presentation should include what replaced the Fairmount Water Works when it closed in 1909.</p> <p>All other teams will research the water supply in a <u>large city</u> in an African or South Asian country, also a World Heritage City: <i>Suggestions:</i> Cairo, Egypt Dakar, Senegal Mombasa, Kenya Fez, Morocco Timbuktu, Mali Kandy, Sri Lanka Hue, Viet Nam Surakarta, Indonesia Amer, India</p> <p>The team may choose their country/city or teacher assigns. Each group will research information, using reliable sources, primary and secondary, if possible, about the past and present conditions of drinking water, and the health conditions of the people.</p>
<p>Closure</p>	<p>Teams will present their research to the class.</p>
<p>Assessment</p>	<p>Students will write an essay comparing and contrasting all of the presentations presented on drinking water past and present in urban areas, Philadelphia and African and South Asian cities.</p>
<p>Key Terms</p>	<p>Reservoir, yellow fever, neoclassical, public water supply, consolidation</p>
<p>Resources and Materials</p>	<p>Library of Congress photographs and prints of Fairmount Water Works https://www.loc.gov/photos/?q=fairmount+water+works&st=list</p> <p>History Making Productions' video, Yellow Fever: 1790-1920,</p>

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Philadelphia: The Great Experiment

<https://www.youtube.com/watch?v=P7L5oIfYcl&list=PLwEWxvgiPVsUAipsMi-beFNyn7dQ6UEza>

Fairmount Water Works Film

<https://vimeo.com/95017596>

Travel Literature from the 'Golden Age' of the Water Works

<http://resourcewater.org/rwfiles/More%20Travel%20Literature%20Excerpts.pdf>

Article: Cool, Clear Water: The Philadelphia Water Works

<http://pabook2.libraries.psu.edu/palitmap/FairmountWW.html>

History Making Productions' webisode, The Waterworks, First in the Nation

<https://www.youtube.com/watch?v=UljN8JwR1jU>