Great Falls: The use of water power and the start of industrialization

Lesson creator: The New Jersey Center for Civic Education, Rutgers University, Piscataway, NJ

Grade level: 4-12

Objectives:

Students will explain how Alexander Hamilton’s idea to use the force of the Great Falls in Paterson, NJ, provided the energy to propel the development of industry in the United States.

New Jersey Student Learning Standards for Social Studies (2020)

6.1.5.GeoSV.2: Use maps to explain the impact of location and place on the relationships between places in New Jersey, the United States and other countries.

6.1.5.GeoHE.2: Cite examples of how technological advances have changed the environment in New Jersey and the United States (e.g., energy, transportation, communications).

6.1.5.EconEM.2: Identify examples of the variety of resources that are used to produce goods and services (i.e., human capital, physical capital, natural resources).

6.1.5.EconEM.4: Compare different regions of New Jersey to determine the role that geography, natural resources, climate, transportation, technology, and/or the labor force play in economic opportunities.

6.1.5.EconNM.2: Use data to describe how the availability of resources in New Jersey and other regions in the United States have impacted economic opportunities.

6.1.5.HistoryCC.9: Evaluate the impact of ideas, inventions, and other contributions of prominent figures who lived New Jersey
6.1.8.EconNE.4.a: Explain how major technological developments revolutionized land and water transportation, as well as the economy, in New Jersey and the nation.
6.1.8.EconNE.4.b: Analyze how technological innovations affected the status and social class of different groups of people and explain the outcomes that resulted.
6.1.12.EconEM.2.c: Analyze how technological developments transformed the economy, created international markets, and affected the environment in New Jersey and the nation.
6.1.12.HistoryCC.6.b: Explore factors that promoted innovation, entrepreneurship, and industrialization and determine their impact on New Jersey (i.e. Paterson Silk Strike) and the United States during this period

Background

The British colonies defeated Britian in the war for Independence and established a constitution for a new government. Now they needed to grow their economy.

Alexander Hamilton, Secretary of the Treasury under President Washington, wanted to set the United States on a path to industrial development as was occurring in Britain. Hamilton had visited the Great Falls on the Passaic River in New Jersey in 1778 when he was serving as an aide to General Washington during the American Revolution and saw how powerful they were. The falls were not only offered energy but were also conveniently located within the main population centers of the country between New York City and Philadelphia and on a river which could be reached from New York Harbor.

In 1792, Hamilton founded the "Society for the Establishment of Useful Manufactures," supported by private investors and chartered by NJ, and established the Great Falls as the first planned industrial city. Under the auspices of the Society for the Establishment of Useful Manufactures, the water falls were used as an energy source to harness the power of the Passaic River for a new industrial economy. Hamilton hoped to demonstrate the ability of the U.S. to use its plentiful raw materials and its people's special aptitude for technological pursuits through successfully manufacturing.

The power of the falls was initially used for grist mills and resulted in the growth of Paterson (named after NJ's first governor William Paterson) as one of the first industrial centers in the United States. Paterson was also the site for the initial manufacturing of the Colt revolvers, as well as the Roger Locomotive Company that built the railroad trains used across the state and the country. Paterson became the center for silk manufacturing in the late 1800s. The historic industrial district of Paterson surrounding the falls is now a National Historical Park.

Have students watch the 90-second Kean University video, “It Happened Here” about Alexander Hamilton and New Jersey at https://youtu.be/YL4hkHAa85o and/or the two-minute Smithsonian video focused on Industry in Paterson at https://youtu.be/GB0oHPPhF_Q?t=41.

Critical thinking map activity:

Ask students to look at a map of the eastern United States and explain why Hamilton selected the Great Falls as the site for the first United States industrial park.
Answers should include the fact that the Great Falls are close to the population centers of New York and Philadelphia, on a river which could be reached from New York Harbor. This made it an ideal location to develop manufacturing since products could be easily shipped to large populations.

Science activity: Hydroelectric power

A 10,950-kilowatt hydroelectric generating station was located at the base of Great Falls, the second-largest waterfall by volume east of the Mississippi River. The current hydroelectric powerhouse was completed in 1914 and operated with its original equipment until 1969. The facility's current three vertical Kaplan turbine generators, installed in 1986, produce approximately 30 million kilowatt-hours of clean energy in a typical year.

Have students read about hydroelectric power at https://education.nationalgeographic.org/resource/hydroelectric-energy-power-running-water. Although we now have many other sources of energy to power industry and electricity, water power is still employed. Have students compare the various sources of energy and their pros and cons.

Extension

Great Falls is a National Historic Park in Paterson, NJ, open to visitors old and young and very interesting. Bring your students to visit Paterson Great Falls or take a virtual tour. For information go to https://www.nps.gov/pagr/index.htm.