Field Trips and In-school Standards-based, Hands-on Education Programs

At the Boott Cotton Mills Museum, Lowell National Historical Park

2017-2018

www.uml.edu/tsongas
We invite you and your students to join us for exciting, student-centered learning experiences that will foster deeper understandings about the history, science, and engineering of the American Industrial Revolution.

**Programs Include**

- A full day of age-appropriate, hands-on workshops and experiences at Lowell National Historical Park sites
- Facilitation by professional educators
- Activities based on state and national curriculum frameworks
- Use of our brown-bag lunchroom facility
- Free online historical information and pre- and post-visit activities at www.uml.edu/tsongas

**New This Year**

- **Power to Production**: Students engage in hands-on research using new interactives to explore how energy moves through a system.
- **Yankees and Immigrants**: “A School for Kids Like Me,” a short, powerful film that introduces students to tensions between Lowell’s Irish immigrants and Yankee natives, and prepares them to engage in a Town Meeting debate.
- **Pre- and Post-Visit Activities**: Visit our website for new activities—and some old favorites—that will help prepare your students for their visit and continue their learning afterwards. www.uml.edu/tsongas/pre-post

**About Us**

The Tsongas Industrial History Center is an education partnership between the University of Massachusetts Lowell Graduate School of Education and the National Park Service at Lowell National Historical Park. The mission of the Tsongas Industrial History Center is to inspire connections with and understandings about America’s industrial past, present, and future through experiential learning using Lowell’s unique resources.

The National Park Service cares for special places saved by the American people so that all may experience our heritage. Lowell National Historical Park tells the story of America’s first planned city for large-scale textile production and the Industrial Revolution. The Park includes historic cotton textile mills, 5.6 miles of canals, operating gatehouses, and worker housing. For more information on public programs call 978-970-5000, or visit the website at www.nps.gov/lowe.

*Photo by Meghan Moore/Megpix. All other photos Tsongas Industrial History Center or Lowell National Historical Park.*
What Makes the TIHC Unique?

• **Science Programs!** We offer facilitated hands-on programs that address many science and engineering frameworks. Think of us as your school’s off-site laboratory.

• **Historic Resources!** We provide access to all the cool, old artifacts that tell the stories of the mills and the people who worked in them. You can’t see resources like these anywhere else.

• **Multiple Grade Levels and Topics!** Our programs address frameworks at various grade levels. Your students can visit in multiple grades for different science and history topics.

• **Our Service!** From the time you call for a reservation to the very last moment of your field trip, we provide curb-to-curb service, with careful attention to your logistical and educational needs.

Curriculum Connections

Our programs meet many state and national curriculum frameworks in history/social studies and science/technology/engineering, *and* they address Common Core Literacy Skills. See our website for more details. Look for these icons to help you select a program that meets your educational goals.

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The programs on these pages include the multi-sensory experience of the operating historic power looms in the Boott Cotton Mills Museum Weave Room.

**Change in the Making**  
*(Grades 3 & 4)*

Local history meets Lowell’s history in an engaging program that addresses curriculum frameworks. Students actively explore changes in land use, the transition from a farm economy to a mill economy, and technological innovations. Students

• Piece together how the lives of people changed when they moved from farm to factory, with historical artifacts and dressing in 19th-century clothing.
• Engage in a hands-on, multi-sensory story comparing regional land and water use from the time of native settlements to colonial farming to industrialization.
• Hand-pick cotton seeds and use a working model of a cotton gin to explore the impact of technology on work.
• Visit a 19th-century boardinghouse where Lowell’s famous “mill girls” lived.

**Bale to Bolt**  
*(Grades 4–12)*

As textile production shifted from homes to factories in the early 19th century, the northern mill economy relied on cotton grown by enslaved people on southern plantations. Through hands-on activities, students examine the advantages and disadvantages of economic and technological change as it affected life and work for Americans—enslaved and free. Students

• Weave their own cloth on handlooms to better understand the time-consuming process of producing cloth by hand.
• Examine connections between the industrial north and agricultural south—mill workers and enslaved people—using primary source quotes and historical artifacts, and compare them with today’s industrial workers.
• Inspect a cotton gin and power loom to identify how changes in technology affected work on plantations and in factories.
• Explore the boardinghouse to find out how Lowell’s “mill girls” spent their leisure time and what their “home” life was like.

“I enjoyed the activity in the museum when students needed to take a side and support it with evidence they could find by exploring the museum.”  
—Teacher, Ashland, MA
Yankees and Immigrants

(Grades 4–12)
The Industrial Revolution depended on people who ran the machines in factories. In the early days, those machines were largely operated by Yankee “mill girls” from farms all over New England. Soon they were joined by successive groups of immigrants from other parts of the world. Students

- Role-play an immigrant or refugee who traveled to America.
- Unpack luggage and examine cultural artifacts.
- Participate in a “town meeting” to debate an issue that troubled Lowell’s native-born and Irish in 1830, after viewing “A School for Kids Like Me,” a short, powerful film that introduces students to the controversy and prepares them to engage in the debate.
- Explore the “Mill Girls and Immigrants” exhibit at the boardinghouse.

Workers on the Line

(Grades 4–12)
During the Industrial Revolution, the new factory workplace changed the nature of work and the relationships between workers and management. In this high-energy program, students examine past, present, and future work when they

- Immerse themselves in producing printed “cloth” on an assembly line, and experience dramatic fluctuations in work conditions.
- Consider joining a union to gain power in the corporate system, possibly engaging mill management in collective bargaining.
- Investigate child labor—in the U.S. and abroad—using Visual Thinking Strategies with historic and modern photographs.
- Explore the Boott Cotton Mills Museum and boardinghouse to gather information to form and support an opinion about work and life in a mill town.

“I liked how we got to see The Bobbin Girl come alive. I liked that we went back to the 1880s and actually saw the real looms that were used long ago.”

—Student, York, ME”
Engineer It!
(Grades 3–12)
Lowell led the way in engineering and mechanical innovation in early industrial America. Engineers chose certain materials and incorporated simple machines into systems that solved problems to make the Lowell system function. Students
• Collaborate in teams to design and build a device using the engineering design process.
• Visit the “The River Transformed” exhibit at the historic Suffolk Mill to investigate technology and materials used to solve real manufacturing problems.
• Explore the Moody Street Feeder Gatehouse to see how simple machines controlled waterpower in Lowell.

Power to Production
(Grades 4–12)
At the start of the Industrial Revolution, water from the Merrimack River powered mechanical systems that allowed Lowell’s machines to produce cloth faster than ever before. As engineers and scientists, students test for solutions to the problem of effectively harnessing waterpower. They work in teams to
• Test water wheels’ speed and strength, digitally recording their data and analyzing graphs to determine which wheel is most efficient.
• Design and build a functioning mill-and-canal system.
• Discover how water’s potential energy was transformed into kinetic energy to power Lowell’s machines.
• Use NEW interactives (cams, belts and pulleys, and gears) to explore how energy was transferred from water to loom in the historic Suffolk Mill.

“Absolutely wonderful, year after year!”
—Teacher, South Berwick, ME
Environmental Impacts of Industrialization

Industrial Watershed
(Grades 7–12)

Nineteenth-century industrial and municipal waste adversely affected the Merrimack River watershed, source of the city’s drinking water. The pollution generated by the growing industrial city had consequences that we are still learning from today. Weaving together historical incidents and scientific investigation, students

• Use simulation tanks to explore how human activity pollutes both groundwater and surface water.
• Solve a mystery to find the origin of an 1890s typhoid epidemic in Lowell.
• Tour an operating weave room and study a canal to hypothesize how pollution traveled from the source into the watershed.
• Examine Lowell’s industrial past to make more informed choices about how we can protect our environment today.

River as a Classroom
(Grades 5–8)

The Merrimack River watershed—shaped by human and natural forces—serves as a living laboratory for the study of ecosystems and earth science. In the role of scientists, students

• Travel by boat on the Merrimack River or in Lowell’s canals (depending on flow rates) to explore how natural and human forces are changing the Merrimack Watershed.
• Collect water samples, perform tests, and analyze data.
• Build and test water filters to assess their ability to clean polluted water.
• Use models to explore how the world’s water is distributed.


“Urban children desperately need positive, educational contacts with the outdoors. This is a unique experience for very many.”
—Teacher, Lowell, MA

“The Industrial Watershed program was entirely hands-on. Our students were able to self-direct while the TIHC staff were able to assess student comprehension of the main ideas on groundwater contamination. An excellent program for middle school students.”
—Teacher, Worcester, MA

PLEASE NOTE:
• Schools must arrange to keep buses in Lowell for use during the River as a Classroom program.
• Students may be outdoors for an extended period of time and should dress appropriately.
In-school Programs: Bring our hands-on workshops to your classroom!

Our in-school programs supplement your curriculum or make a great pre-visit activity for trips to TIHC. The programs are highly participatory—no bus fees required, because we come to you within a 50-mile radius of Lowell. Offered October 2017–April 2018.

FEES per class of 30 students: $150 for first school program, $100 for successive same-day programs.

**Exploring the Immigrant Experience** (*Grades 4–6*)

examines the experiences of immigrants who have settled in New England. Working with primary sources—oral histories and artifacts—students look at elements of the immigrant story, such as the decision to leave, the journey, hardships, assimilation, and preserving culture. Students explore how immigrant groups have helped to shape American culture. *(90-minute program.)*

**Farm to Factory** (*Grades 3–5*) focuses on the transition from an agrarian society as experienced by young people who left their New England farms to work in mills. Some members of the class dress in 19th-century clothing, and every student will pick, card, and spin wool, and weave cloth on small looms. A great pre-visit activity to prepare your students for attending our Change in the Making program. *(90-minute program.)*

Rent Our In-school Resource Kit

**“The World of Barilla Taylor”** (*Grades 6–12*) In 1843, fifteen-year-old Barilla Taylor left rural Maine to work in Lowell’s mills, dying of unknown causes only two years later. This unique, interdisciplinary kit provides a first-hand view of farm life, city life, factory work, and boardinghouse life. Students read Barilla’s personal letters and examine primary sources such as maps, mill timetables, corporation hospital records, and even shopping receipts! Rental fee of $40 includes UPS school pick-up. Three-week rental period. Call 978-970-5080.

Pre- and Post-visit Activities and Teaching Resources

Visit our website (www.uml.edu/tsongas) for a collection of pre- and post-visit activities, lesson plans, curriculum units, and primary sources to help prepare your students for their visit and to continue their learning afterwards. The website also describes educational materials and novels such as *The Bobbin Girl* and *Lyddie* that complement our programs and are available at the National Park’s bookstore.

Bringing History Home

In this online game, students take on the role of Eliza Paige, a farm girl who has just arrived in Lowell, and make a series of choices that mill girls like Eliza faced. Each choice has a consequence and leads to new choices and a new future for Eliza. Students can play the game multiple times, making different choices for Eliza to see how those choices change her life. www.uml.edu/tsongas/resources/multimedia

Visit our website at www.uml.edu/tsongas.
Teacher Professional Development

Want to know more about teaching with historic resources such as objects and primary sources? We will collaborate with you to create a professional development opportunity that enhances your curriculum and sets students up for an enriching visit at the Tsongas Industrial History Center.

The Tsongas Industrial History Center, an approved PDP and CEU provider, offers a variety of professional development opportunities that especially appeal to teachers of history, science, and English language arts.

Visit our website (www.uml.edu/tsongas) for notices of teacher workshops and institutes, or contact us to join our mailing list.

Teach Using Our Spaces

Want to layer math or ELA skills over our existing workshops? Interested in using our workshop spaces to facilitate your own lessons? We are happy to help you design your own program using our hands-on resources, or we can co-teach with you. Just give us a call!

“I liked it because it was interesting to see everything we’d learned about in person!”

—Student, Boston, MA

“The TIHC has been a great partner for the Haverhill Public Schools. Through their interactive instructional programs for students and professional development for teachers, they provide invaluable insight into the stories of our past and practical classroom application that directly supports teaching and learning of social studies.”

—District Supervisor, Social Studies and World Languages, Haverhill Public Schools
What teachers are saying about TIHC programs

“We come back every year because it is a well-run, organized day with no stress for the teachers! We love how the staff meet us and direct us all day on what to do!”

“My students absolutely loved their experience. They felt like they were able to make connections with previously learned information, as well as learn something new.”

“We were pleasantly surprised this age group [community college students] took to the program so readily. The engineering students enjoyed studying models of water power, and the history students were fascinated with the debate and explanations.”

“You always do a wonderful job, and I’ll be calling ASAP to get on your schedule for next year. Thank you!”

“I have done this field trip [Workers on the Line] many times before, this time it far exceeded any of the other experiences. The curriculum seems to be centered more around critical thinking, which is more engaging.”

“Thank you for a fantastic experience! It was well-organized and engaging for all students. The takeaway resources were excellent to extend our visit to discuss and share the experience with each other.”

“Every year my students say, “That was the best field trip,” and this year was no exception.”

“The program [Farm to Factory] fit perfectly with the Common Core strands.”

“They had a great time! The activity and the lesson [Industrial Watershed] were perfectly on their level, and they learned a lot and had fun.”

#bestfieldtripever
Reservations & Information

September through June

Field Trip Fees: $225 per group (no additional charge for teachers and chaperones)
River as a Classroom: $280 per class
In-school Programs: $150 for first, $100 for successive same-day programs
Class Size: Up to 30 students per group. Minimum two adults per program group—with a ratio of one (1) adult for every ten (10) students.

January Discount

Join us in January and enjoy a $40-per-class discount on field trips!
Field trips are discounted to $185 in January only.
No need to worry about the weather—we schedule snow make-up days throughout the winter months.

Frequently Asked Questions ... and Answers

How do I make a reservation?
Call 978-970-5080 to reserve by phone. For your preferred programs and dates, call at your earliest convenience. Reservations begin May 1, 2017 for 2017-2018 school programs.

What is your trip confirmation and cancellation policy?
Prior to your visit, you will receive logistical information and an invoice. If any information is incorrect, or if you must cancel your visit, please call us. Failure to cancel a visit 30 days in advance deprives another school of the opportunity to visit. Payment by check or purchase order is due no later than 30 days prior to your visit.

Can you help us locate transportation money?
The Tsongas Industrial History Center is an approved location for Massachusetts Cultural Council Big Yellow School Bus transportation funds. Contact us or visit our website for more information.

How are the programs at the Tsongas Industrial History Center organized?
We offer two of each program a day, accommodating up to 60 students (30 per program), and four of Change in the Making—which can accommodate up to 120 students (30 per program). The schedules for each program rotate through the various activities, so all students doing a program have the same experiences but in a different order. (See website for all itineraries.)

Do your programs address curriculum standards?
Our programs are designed to help students develop understandings related to state and national standards. See our website for more details. You might be surprised by the variety of standards our programs address.

What if we are unable to arrive by the scheduled time or have to leave early?
When you make your reservation, please let us know of any scheduling issues. We will do our best to ensure that students receive the essential elements of all programs.

What if the programs I reserve for my field trip have different starting and ending times?
Our teaching staff will choose from a repertoire of short and meaningful activities to fill the time between one program’s start/end time and the other’s.

Can we extend our day and add workshops?
Yes. Extend your class’s experience by adding a 60-minute hands-on workshop after your Tsongas Industrial History Center full-day program. For example, add the Workers on the Line workshop to a Bale to Bolt program. Additional fee: $100 per class.

Another option to extend your day is scheduling a self-guided visit to other Lowell National Historical Park resources that might not be included in your program, such as the “Mill Girls and Immigrants” exhibit at the boardinghouse, the Visitor Center orientation film, or the Boott Cotton Mills Museum.

What itinerary changes are permitted?
We may be able to make minor changes but must observe lunch and trolley schedules. Visits to tour spaces not already in your itinerary could be limited by the presence of other scheduled groups. (See website for all itineraries.)

Are your facilities accessible?
Yes. Every workshop and tour location is accessible, and our professional teaching staff is skilled at teaching students with special needs. When making a reservation, please notify us of the special needs of any students. We also have private rooms for medical needs and first aid/CPR certified staff on site.
RESERVE NOW FOR THE 2017-2018 SCHOOL YEAR!