



2019-2020 FIELD TRIPS AND IN-SCHOOL EDUCATION PROGRAMS

At
BOOTT COTTON MILLS MUSEUM
LOWELL NATIONAL HISTORICAL PARK



EXPLORE THE HISTORY, SCIENCE, AND ENGINEERING OF THE AMERICAN INDUSTRIAL REVOLUTION



WHERE DO I FIND INFORMATION ABOUT ...

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FIELD TRIPS INCLUDE

- A full day of age-appropriate, hands-on workshops and experiences at Lowell National Historical Park
- Facilitation by professional educators
- Activities based on state and national curriculum frameworks
- Use of our brown-bag lunchroom facility

ABOUT US

The Tsongas Industrial History Center is an education partnership between the University of Massachusetts Lowell College 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.

	Grade Level								History and Social Science	Earth and Life Science	Physical Science and Engineering
	2	3	4	5	6	7	8	HS			
Bale to Bolt											
Change in the Making											
Community Connections (pilot program)											
Engineer It!											
Exploring the Immigrant Experience											
Farm to Factory											
Industrial Watershed											
Power to Production											
River as a Classroom											
Workers on the Line											
Yankees and Immigrants											

RESERVATIONS AND INFORMATION

Reservations begin May 1, 2019.

Field Trip Fee: \$225 per group (no additional charge for teachers and chaperones)

River as a Classroom: \$280 per group

In-school Programs: \$150 for first, \$100 for successive same-day programs

Group Size: Up to 30 students per group

Chaperones/Teachers/Adults:

We require a **minimum** of two (2) adults per group—with a ratio of one (1) adult for every ten (10) students. Each group should include a teacher, one or two chaperones, plus any additional staff (aides, nurses, etc.) your group requires. **Maximum** of six (6) adults per group.



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 makeup days throughout the winter months.

FREQUENTLY ASKED QUESTIONS ... AND ANSWERS

For more FAQ and a video about our curb-to-curb service, go to uml.edu/tsongas/visit/plan-your-visit.aspx.

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, 2019 for 2019-2020 school programs.**

How are Tsongas Industrial History Center field trips organized?

We offer two of each program per 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.)

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 their program.

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 program'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 may 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 locations 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.

Want to stay informed about what's happening at TIHC?

Email us: tihc@uml.edu.

* Photo by Meghan Moore/Megpix.

** Photo by Jim Higgins.

All other photos: Tsongas Industrial History Center or Lowell National Historical Park.



CHANGE IN THE MAKING

(Grades 3-4)

Meets new Massachusetts 3rd-grade social studies and engineering standards.

New England history comes to life as students explore the geographic and demographic origins of Lowell, representational of the transitions faced by many early 19th-century communities. Through hands-on activities, they explore the ways in which native people, early European settlers, and factory-planners used the land, as well as the evolution from rural to urban lifestyles. They also become engineers to generate solutions to a design problem that changed the course of the Industrial Revolution.

- Use historical artifacts and dress in 19th-century clothing to discover how people's lives changed as they moved from rural to urban communities.
- Narrate a story by comparing regional land and water use from the time of native settlements through colonial farming to industrialization on a 3-D map that they construct.
- Engineer solutions to make an industrial process easier.
- Visit a 19th-century boardinghouse where Lowell's famous "mill girls" lived.

BALE TO BOLT

(Grades 4-12)

Meets new Massachusetts 5th-grade standard on the important role of industry in the early Republic, and United States History 1 standards about economic growth and interdependence between the North and South.

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 understand better the time-consuming process of producing cloth by hand.
- Use primary source quotes and historical artifacts to compare the experiences of workers in the 19th-century industrial North and agricultural South, and then contrast those experiences with those of today's international 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.

YANKEES AND IMMIGRANTS

(Grades 4-12)

The Industrial Revolution depended on people who ran the machines in factories. In Lowell's 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.

COMMUNITY CONNECTIONS

(Grade 2)

Meets new Massachusetts 2nd-grade social studies standards on migration and community.

In response to the new 2nd-grade standards on migration, our newest program will help students explore the concept of community—who is part of it, how people contribute to it, and what makes it special and strong. We will launch this pilot program in November. Please contact us at tihc@uml.edu for details on how your class can participate in the pilot phase of the program.

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



WORKERS ON THE LINE

(Grade 4-12)

Meets the new Massachusetts 8th-grade civics standards about rights and responsibilities of citizens.

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.

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 “work.” Students:

- Collaborate in teams to design/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 (fall and spring).
- Apply engineering thinking skills to solve safety problems associated with a historic loom at the Boott Cotton Mills Museum (winter).

POWER TO PRODUCTION

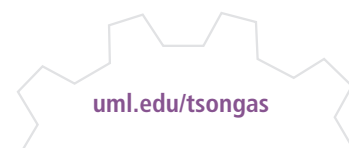
(Grades 4-12)

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 waterwheels’ speed and strength, digitally recording their data and analyzing graphs to determine which wheel works best.
- 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.
- Manipulate cams, belts and pulleys, and gears to explore how energy was transferred from water to loom in the historic Suffolk Mill.



Engineer It! and Power to Production include a ride on Lowell National Historical Park’s replica trolley. Please note that trolleys do not operate between November 28, 2019 and March 8, 2020; therefore, schools must arrange to keep buses in Lowell for use during this time.





ENVIRONMENTAL IMPACTS OF INDUSTRIALIZATION

INDUSTRIAL WATERSHED

(Grades 7-12)

Nineteenth- and twentieth-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.

Industrial Watershed includes the multisensory experience of the operating historic power looms in the Boott Cotton Mills Museum Weave Room.

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 river 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.

PLEASE NOTE: Schools must arrange to keep buses in Lowell for use during River as a Classroom. Students may be outdoors for an extended period of time and should dress appropriately.

Maximum of two classes per day.

Boat capacity: 30 students and 3 adults.

\$280 per class. Available September 9, 2019-October 18, 2019 and May 4, 2020-June 12, 2020.



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 are required, because we come to you within a 50-mile radius of Lowell.

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

Exploring the Immigrant Experience

(Grades 4-5) 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, fitting in, and preserving culture. Students explore how immigrant groups have helped to shape American culture. *(90-minute program. October 21, 2019-June 12, 2020.)*

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, plus 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. Offered October 21, 2019-June 12, 2020.)*



ONLINE RESOURCES

Visit our website (uml.edu/tsongas) for a collection of pre- and post-visit activities, videos, 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.

In **Bringing History Home**, a choose-your-own-adventure game, students take on the role of Eliza Paige, a farm girl who has just come to Lowell, and make a series of choices that mill girls like Eliza would have faced. Each choice has a consequence and leads to new choices and a new future for Eliza. The game can be played multiple times, making different choices for Eliza to see how those choices change her life.

The World of Barilla Taylor—Available online summer 2019! This unique set of primary documents chronicles the life of Barilla Taylor, a young woman who left rural Maine in 1843 to work in the mills, dying of unknown causes only two years later. Students become historians as they read Barilla's personal letters and other primary sources to explore life and work in Lowell's mills. The hard-copy kit of primary sources is still available for rent for a \$40 fee (includes shipping). Call 978-970-5080.

TEACHER PROFESSIONAL DEVELOPMENT

Let us know if you would like to collaborate with us any time of year to create a professional development workshop that enhances your curriculum and sets your 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 (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!

COLLEGE AND UNIVERSITY FACULTY

Faculty at colleges and universities can use TIHC for:

- Hands-on, place-based programs (like those described in this brochure) especially for college-aged students
- Research-based projects
- Faculty professional development



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