

# Historical Forensics

WHERE HISTORY, SCIENCE AND COMMUNITY INTERSECT

by Jen Manwell

“What is it?”  
“How does it work?”

This winter, I investigated technology with middle schoolers at Putney Central School in Vermont. This was not just any technology, but the cutting edge of technology: nineteenth-century innovations. Two days a week, I joined Connie Bresnahan in her classroom and we traveled back in time to nineteenth-century Putney.

The students lived dual lives. Within a simulation that I created as part of a *Historical Forensics* curriculum, the students each adopted a nineteenth-century persona who lived in a representational town. The students, working in small groups, were each assigned a local family from 1850 and 1860 census records. Each group created a back story for their family using the information they gathered from the census. Then each student chose one particular family member to represent.

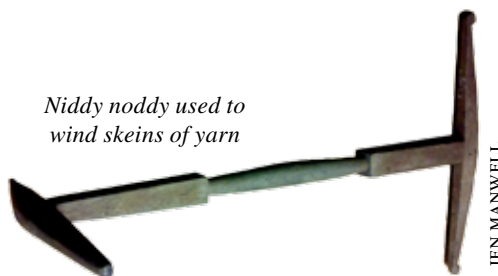
While creating a historical fiction narrative, students also worked within the nonfiction world as present-day historical forensic scientists whose mission it was to piece together clues from primary sources and artifacts to better understand what life was like for their historical alter egos. In our classes, we spent time pouring over inventories (catalogue of every item in a deceased person’s estate), census information, letters, advertisements, books on farming, images from the Library of Congress, and photographs of artifacts from Billings Farm & Museum and The Henry Sheldon Museum.

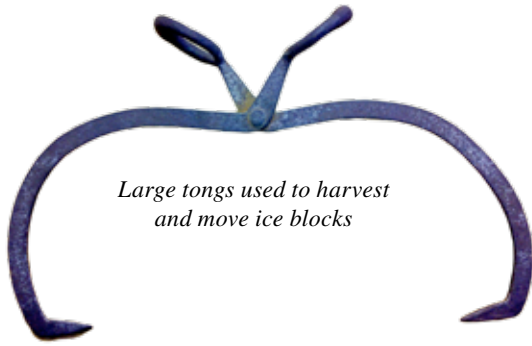
## Household Tools Reveal Nineteenth-Century Details

What can be learned about a nineteenth-century family based on the tools they owned? How were the tools used? How have farming and household tools changed over time? What effects did these changes have on rural New Englanders? As we proceeded with this unit, the students came to realize and appreciate the huge changes that took place in that era and the stream of resulting innovations.

We started the inquiry-based *Historical Forensics* unit by analyzing inventories. As we tried to decode the spidery handwriting of the time and translate names of objects into images and functions that we could understand, a gallery of actual artifacts took over the classroom. First was a niddy nody I had borrowed from an octogenarian friend. Intended as a hook to pique the students’ curiosity, the unfamiliar tool did just that. Two boys were particularly intrigued. They kept asking probing questions to gather clues about the possible uses of the mystery tool. Having successfully figured out the function of the tool, they proudly announced their discovery to the class. Little did they know, they had just modeled for their peers the value of the inquiry process and how their own curiosity drew them to collect, analyze, and synthesize clues until they had created a new understanding.

This led to two wonderful outcomes. Discovering that a niddy nody offered a way to make skeins of yarn led us backwards into an investigation of spinning and spinning wheels. This gave a new meaning to the inventory items: “large wheel” and “small wheel.” Additionally, once hooked, the “niddy nody boys” continued the circle by bringing in artifacts of their own to share: horseshoes of various sizes. This inspired another student to bring in a horseshoe that had been used during winter





Large tongs used to harvest and move ice blocks

ice harvests. Next, ice tongs, used for harvesting huge blocks of ice, were added to the collection as was a photograph of an icebox.

The very nature of inquiry learning transforms learning away from a linear, top-down approach confined to the classroom into a student-centered approach that draws upon the experiences of a larger community. The children were intrigued by all these gadgets and were asking their parents and grandparents about tools. The family members, in turn, were eager to share their ancestral stories. Several of them directly thanked Connie for offering this type of learning experience to their children.

As our artifacts gallery grew; so did the stories that children were hearing and sharing from their families about their local community. One of the “niddy nobby boys” discovered that his great-grandfather had been an iceman in Putney!

## Simple Machines

There was clearly an interest in ice. Using a set of Ice Harvesting Tool Cards designed by *Historical Forensics* co-creator Beth White from photographs taken at the Billings Farm & Museum and from photographs archived at the Library of Congress, the middle schoolers investigated the process of harvesting ice. The first step was for the students to analyze and attempt to sequence the cards within small groups. Luckily we had an expert in our midst. One of the students had helped with the ice harvest on Squam Lake and had reaped the benefits during the summer when large blocks of ice were delivered to his cabin to preserve his family’s food. Next, we used an ELMO document camera to project the sequenced images and discuss them as a whole group. We marveled at the simplic-

ity of using spiked shoes for both men and horses to provide traction on the ice and revisited our own spiked horseshoe in our artifacts gallery. We noticed that the vast number of ice tools could be boiled down to a collection of simple machines including levers, pulleys, inclined planes, screws, and wheels. Ice harvesting was a community event, requiring a carefully choreographed sequence of events. While it was a well-paid job, it was also very dangerous! The workers had to know, inside and out, the physics of working ice and use their tools to their fullest potential.

We then launched into investigations of storing ice in icehouses and insulating it

with hay and sawdust. The innovation of the railroad, and later insulated railroad cars, were used to ship ice to cities, thus changing a community resource into a cash crop. As historical forensic scientists, we had collected artifacts and stories maintained by modern day community members to better understand daily life for our nineteenth-century villagers.

Beth White and I have been creating *Historical Forensics: Investigating Untold Stories from nineteenth-century New England Through Primary Sources* (largely supported by a grant from the Library of Congress) as a three-tiered project incorporating à la carte activities, a simulation, and five different sets of tool cards. Our goal is to make American history personal, taking it beyond the generic distilled lists of dates and names of famous white men that all too often dominate history books. We want children to see how their own families, neighbors, and communities were important parts of history and therefore that they themselves will be important players in the future.



Students discuss the tool cards.

The students were fascinated to learn firsthand from the 1860 Putney census that their town was home to African Americans as well as people who had moved from Ireland, Canada, Scotland, Georgia, Illinois, and California. They learned that in addition to farmers, there were also people earning a living as mill workers, railroad workers, doctors, lawyers, blacksmiths, wheelwrights, and papermakers.

## Taking Apart and Building Together

Using modern day media literacy techniques, we deconstructed advertisements from the 1860s. The students were curious about this rise of advertising and, along with it, the shift for many rural families from making and trading for just what was *needed* to purchasing what was *wanted*. Through a historical lens, the students learned about technological innovations that directly impacted their town: changes in power (water, steam, coal, natural gas, electricity), changes in transportation (trains and canals), and changes in household tools (clothes washers, cast-iron cook stoves, portable saw mills, and sewing machines).

The day after discussing the New Home sewing machine, a student came to class with photographs he had taken of an old sewing machine that had been serving as a table for his fish tank. He had evicted the fish (and their tank) to get a better look at the sewing machine. He described to us how the machine was foot-powered with a pulley that engaged gears in the machine and ultimately set the needle in motion.

To pull all these ideas together, each student created a narrative from his or her nineteenth-century character's point of view. The goal was for students to synthesize the knowledge they had gained by analyzing multiple primary sources and then piece all the clues together to tell the story of a nineteenth-century community. They used Google Docs as their writing platform to share their stories with classmates. Through a peer review process, they took advantage of their learning community by sharing affirmations and suggestions as a means for improving their writing. Thanks to the modern innovation of "cloud" computing, students could openly share online the challenges and successes of their nineteenth-century community and its inhabitants: a marriage of technology, history, and community.

Students tend to think of technology as the culmination of electrical gadgets they have at their fingertips. However, through their nineteenth-century personas, they experienced a broader view of technology as creative innovations that solved real life community problems. ✍️

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