

# Digital Commonwealth



## Massachusetts Collections Online

### Lesson Plans for Digital Commonwealth Primary Sources Project

**Project Title:** Peabody Math Trail 3: Government Connections

**Co-taught by:** Diane Devine and Sudi Smoller

**School:** Higgins Middle School, 1 King St. Ext., Peabody, Mass. 01960

**Grade of students that lesson was used with:** 8

**Background information for project:** This lesson was the third in a series that began when students were in grade 6. The Peabody Math Trail consists of two other parts, one called Our Neighborhood (focusing on the neighborhood around the Higgins) and Industrial Math Trail (focus on sites like the Eastman Gelatin Corporation and the Danvers Bleachery). This year as grade 8 students, they designed the final phase of the Trail called *Government Connections*.

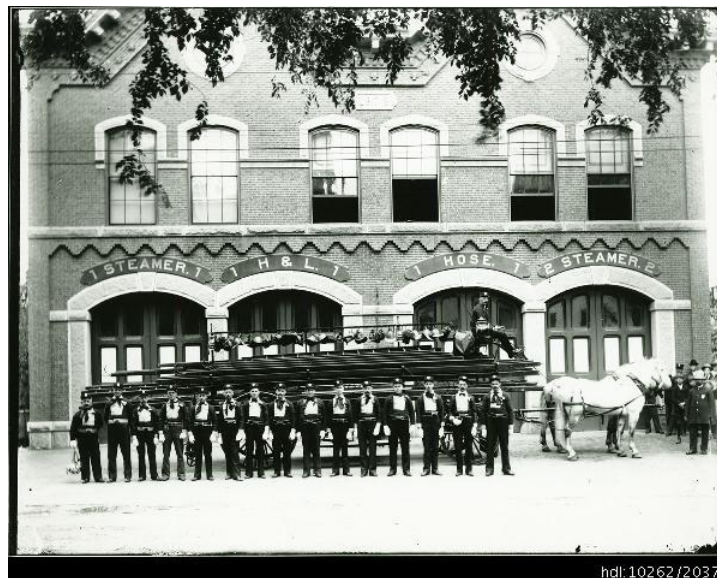
**Instructional objectives:** Students will:

- understand the various roles of government
- understand the types of careers available in government
- understand that primary sources are “eyewitness accounts” of history
- understand that by looking at how ordinary people experienced events they can better understand some of the key points in American history.
- connect the history of their community to the solving of grade level mathematics problems in an MCAS-style
- look for solutions for issues which will impact their lives in the present and the future, such as the flooding in Peabody Square
- [Curriculum Frameworks Standards](#) [suggested link as of 12/2015: <http://www.peabody.k12.ma.us/Page/3829>] will be used to form the basis for questions associated with each site.

**Digital Commonwealth primary sources used:**



From NOBLE Digital Heritage, Collection: Peabody Glass Plate Photographs  
Citation: "Peabody fire department." Photograph. 1896. *Digital Commonwealth*,  
<http://heritage.noblenet.org/items/show/8419> (linked checked 12/2015).



From NOBLE Digital Heritage, Collection: Peabody Glass Plate Photographs  
Citation: "Peabody fire department." Photograph. *Digital Commonwealth*,  
<http://heritage.noblenet.org/items/show/8418> (linked checked 12/2015).

<http://diglib.noblenet.org:8080/dspace/handle/10262/2037>



from Digital Commonwealth

From NOBLE Digital Heritage, Collection: Peabody Glass Plate Photographs  
Citation: "Peabody City Hall." Photograph. *Digital Commonwealth*,  
<http://heritage.noblenet.org/items/show/8426> (linked checked 12/2015).



From NOBLE Digital Heritage, Collection: Peabody Glass Plate Photographs  
Citation: "George Peabody House." Photograph. *Digital Commonwealth*,  
<http://heritage.noblenet.org/items/show/8431> (linked checked 12/2015).

**Additional materials and resources used:**

The math teacher developed questions for the Trail. A field trip was made to the Peabody Leather Museum, Peabody Institute Library, Peabody City Hall, Peabody Leather City Common, Brooksby Farm, school library computer lab and disposable digital cameras. In previous years, teams of students shared a camera. Due to Digital Commonwealths grant, each student had a camera for his/her individual use.

**Description of and sequence of learning activities:**

1. Students met as a class to review the website (<http://www.peabody.k12.ma.us/Page/3829>) created of our planned trail.
2. Students, each with a digital camera, set out walking the trail and stopped at the Peabody Police Department, the former Daniel Keefe School, and the Peabody Leather Museum. A bus transported the students from the Museum to the Peabody Institute Library where they received a tour of the architecturally significant building and its collection of public art. And interviewed the Library Director. Students walked next to Peabody City Hall where they were met by the city's Purchasing Agent, Director of Weights and Measures and Gerry Bellew, a Peabody Historical Commissioner and former Peabody police chief. The students toured the area that was formerly the city's Police station and other areas of City Hall, culminating in Mayor Michael Bonfanti's office. The group walked past the Peabody Fire Station to the Leather City Common. A bus then transported the students to the city's working farm, Brooksby Farm. From what they learned in these stopss along the Trail, information was used to answer math questions when they returned to school.

**Assessment measures used to determine whether the stated objectives were being met:** As students answered questions, correct answers were recognized and redirection was given. Since time is very limited in this pull-out project, a formal written test was not possible.

**Correlation to the Massachusetts State Curriculum Frameworks (be specific):** MA Curriculum Frameworks Standards for grade 8 will be used to form the basis for questions associated with each site. These standards include the following:

- 8.N.9 Use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.
- 8.P.4 Create and use symbolic expressions and related them to verbal, tabular, and graphical representations.

8.P.7 Set up and solve linear equations and inequalities with one or two variables, using algebraic methods, models and/or graphs.

8.G.4 Demonstrate an understanding of the Pythagorean Theorem Apply the Theorem to the solution of problems.

8.M.4 Use ratio and proportion (including scale factors) in the solution of problems, including problems involving similar plane figures and indirect measurement.

*Social Studies Frameworks -*

USG.5.6 – Identify specific ways for individuals to serve their communities and participate responsibly in civil society and the political process at local, state, and national levels of government.

**Were your objectives achieved? If so, how? If not, why not.** Students were introduced to the role of local government and to government career opportunities. They are more informed citizens. They have an increased knowledge of the city's public buildings, architecture and art. In previous years, the Math Trail was a project of the school's Math Specialist – that position was eliminated this year due to budget cuts and scheduling the Math Trail class was problematic. As a result, there was not adequate class time for group work. We believe that objectives were met based on the work done by students. We hope to carve lab time out for the students to work on presentations in June 2010.

**How has this project changed your teaching practice and impacted student learning?** This project has reinforced the benefit of using technology for inquiry, communication, construction and expression. It also underscored the appeal of visual learning tools. The Peabody Math Trail has been a wonderful experience of connecting the history and mathematics of our city. It has produced a website which the students can share in the future with their children.

**Explain how your project might be replicated in other schools and with other students at different grade levels and with different abilities and learning styles.**

A similar project was observed at the Children's Museum in San Diego; this project was part of a teen area where teens had photographed similar areas in their community and posed questions related to the photos. It is hoped that our project will stimulate other educators to do the same and to begin a dialogue with us.

**If possible, please include any photos, samples of student work, and project worksheets.**

Please go to: <http://www.peabody.k12.ma.us/Page/3829>



Peabody Leather Museum Curator Merritt Kirkpatrick demonstrates an antique leather measuring machine – a great source of math problems!

Originally completed 2010

Links updated 12/2015