WELCOME!

Teaching with Primary Sources across Tennessee, administered by the Center for Historic Preservation at Middle Tennessee State University, engages learners of all ages in using primary sources to explore major issues and questions in many different disciplines.

Contact: Stacey Graham or Kira Duke at (615) 898-2947 or www.mtsu.edu/tps

NEWS

- New webcast “Using Primary Sources from the Library of Congress: Teachers’ Experiences” is available online. Listen to Perry Loudon from Rockvale Middle School and Clifton Kaiser from Battleground Academy share lessons they developed out of last summer’s TPS-TN Civil War Summer Institute and talk about how their students have responded to the use of primary sources. Click here to access this particular webcast or click here to access the webcast archives.

- Don’t forget to submit your application for the 2011 TPS-TN Summer Institute: Divided Tennessee! Learn how the secession debate divided communities in Tennessee, explore related primary sources, visit key Civil War site in the Nashville area, and build lesson plans for your students. The application deadline is May 20.

“AWESOME” SOURCE OF THE MONTH:

Novel device for stopping a runaway horse - Designed by Ed. Reichenbach, Orrville, Ohio [c:1892]

This device utilizes a pulley system. How does a pulley system work? Would this invention actually stop a runaway horse?

THEME: INVENTORS & INVENTIONS

In America, we pride ourselves on our entrepreneurial spirit, which creates a welcoming environment for inventors to dream up new inventions that will improve American lives. This newsletter will highlight some of those inventions, both from America and abroad.

The history of technology is a subject for which the Library of Congress has plentiful primary sources, supporting materials, and teaching ideas. From the history of manmade flight, to the development of new industrial tools, to “first drafts” (so to speak) of the telephone, gramophone, computer, and internet—you can find primary sources to engage your students and relate old technologies to types they use today.

UPCOMING EVENTS:

- April 7 — (Murfreesboro) Webcast, “Using Maps from the Library of Congress,” MTSU Instructional Technology Support Center, 3:30 to 4:30 p.m. For viewing options and more info, click here.

- May 4 — (Knoxville) Workshop, “Forging Ahead: East Tennessee Communities and the New Deal,” East Tennessee History Center, 9 a.m. to 3 p.m. Must have attended previous TPS-TN workshop or presentation to participate. To register, email Lisa Oakley.

- May 20 & 21 — (Nashville) Middle Tennessee Home Education Association Conference at the Nashville Expo Center. Visit the TPS-TN booth for materials and ideas!

- June 7 & 8 — (Memphis) Workshop, “Utilizing Primary Sources” at National Civil Rights Museum, 9 a.m. to 3 p.m. Open to Memphis City School educators. Registration available through the Avatar system.

- July 19-21 — (Murfreesboro/Nashville) Summer Institute, “Divided Tennessee,” 9 a.m. to 3:30 p.m. More info here; sign up here!

Teaching with Primary Sources is a program of the Library of Congress, and is administered in Tennessee by the Center for Historic Preservation at Middle Tennessee State University.
**Lesson Idea—Thomas Edison’s Light Bulb**

Although not the original inventor of the incandescent light bulb, Thomas Edison is often credited with its invention. Edison actually took the previous work done by more than twenty scientists and inventors toward the creation of the light bulb and improved on it to make a longer-lasting, more practical light bulb that could be used widely. Edison spent several years working to improve his design so that electric lighting could be affordable to the average person.

Begin by showing students Part 3, 4, and 5 of *A Day with Thomas Edison*. (These short video clips are available in RealMedia, MPEG, and Quicktime formats.) While watching each clip, have students identify the different parts of the light bulb. After each clip, discuss as a class what elements of the light bulb were shown. After watching all three, have students draw a diagram of the early light bulb with the elements they identified in the film. As a class, discuss how the different components work together to make the light bulb illuminate. How does electricity flow through the bulb to produce light? Are there other by-products of this process?

Next show students a modern day incandescent light bulb. How is it different from the one in their diagram? Do the components of the bulb allow electricity to flow differently? How are these bulbs different from newer compact fluorescent bulbs?

This idea can be adapted to meet curriculum standards for Science grades 4 and 6 (Standard 12: Forces in Nature and Embedded Technology & Engineering).

**Lesson Idea—The Evolution of Flight**

Human fascination with flight dates all the way back to 1000 B.C.E., when the kite was invented in China. Since then, various machines have been invented for flying, including balloons, planes, and rockets. The Library of Congress Web site contains numerous collections, special presentations, and primary sources related to the history of flight. Students can explore the early history of balloon flight by looking through the images in the Tissandier Collection, or they can view several collections relating specifically to the Wright Brothers, including The Wilbur and Orville Wright Papers and Wright Brothers Negatives collection.

Another great resource is the Special Presentation The Dream of Flight. Print out a copy of the Timeline of Flight. Cut up the timeline so the dates are separated from the events. Then, have students get into groups of four or five to try to match the event with the proper date. Afterwards, show students the following images of a hot air balloon, a parachute, the “first flight,” Zeppelin No. 3, and a rocket. Compare and contrast them. How does each one achieve flight? How has the achievement of flight impacted our society? In addition, have students write a short research paper on a topic of their choice related to flight (e.g., person, particular period, flights and myths, advertisements) using primary sources from the Library of Congress Web site.

This idea can be adapted to meet curriculum standards for U.S. History grades 9-12 (Era 6: Industrial Development of the United States, 1870-1900), English I-IV (Standard 7: Media), and Science grades 6-8 (Embedded Technology & Engineering).
FEATURED LESSON—CIVIL WAR COMMUNICATIONS

How is sending messages through a telegraph like sending text messages through a cell phone? How did generals on the battlefield communicate with the president in Washington, D.C.? These and other questions are posed in a new lesson plan created for TPS-TN by Perry Louden, a technology teacher at Rockvale Middle School in Rutherford County.

In his lesson plan, “Civil War Communications: The Role of the Telegraph on the Battlefield,” Mr. Louden combines primary source image analysis, background history of the invention and use of the telegraph, and exercises in Morse Code to engage students in two days of worksheet- and computer-based activities that cover several middle school curriculum standards in Technology Engineering (Career and Technical Education).

Students also learn how to translate a Morse Code message into standard letters, and then another message into Morse Code!

Mr. Louden began work on this lesson plan while a participant at the 2010 TPS Civil War Summer Institute. You can view him demonstrating and discussing this lesson in our latest Webcast, “Using Primary Sources from the Library of Congress: Teachers’ Experiences” (see front page News for links).

FEATURED FEATURE—INGENIOUS INVENTIONS THROUGHOUT HISTORY

Could you recognize a cotton gin from an 1896 ad? What about an ornithopter from an old photograph? What in the World Is That?: Ingenious Inventions Throughout History is a game that connects primary sources of early technology with student examination and thought about what inventions should look like. This game is perfect for teachers who want to put their students in front of computers and have them get engaged with primary sources onscreen. You can find this activity by clicking on the link above, or by going to the list of Activities under Classroom Materials: Presentations and Activities, on the Library of Congress Teachers Page.

The game requires a “plug-in” called Adobe Shock Wave, which you can conveniently download from the link provided. You are provided with an invention name and eight primary source images, only one of which matches up correctly with the name. See if you can get a perfect 8 out of 8 score!

Once you’ve finished the game, you have the option to play again or “learn more.” Sometimes, this “learn more” link isn’t working and can kick you off the activity. I recommend using the “Learn More About Ingenious Inventions” link from the main page of the activity, or from one of the tabs at the top of the game pages. The Resources tab (which is the same as “Resources for Teachers” on the activity home page) takes you to photo credits and lots of further links at loc.gov that have primary sources and other information related to inventions.

MORE IMPORTANT LINKS:
- Samuel F.B. Morse Papers at the Library of Congress, 1793-1919
- Invention (selected manuscripts) from Words and Deeds in American History
- Experiments and Inventions (Pictorial Americana)
- Punched Cards to IBM (TPS-TN lesson activity about the ancestors of modern computers)
**Electricity vs Gas**

Light thrown on a dark subject (which is bad for the gas companies) [1878]

What argument is this 1878 political cartoon trying to make? How did people light their homes prior to electric lighting? How did the invention of electric lighting impact the daily lives of people? How long did it take for electric lighting to be widely used throughout the country? When did it become common in your hometown?

**Whitney’s Cotton Gin**

Thomas Jefferson to Eli Whitney, November 16, 1793

Have students read the transcription of this letter. What impact did the invention of the cotton gin have on the production of cotton? How does a gin work? Why would Jefferson have been so excited to learn about this invention?

**Lightning Strikes**

Furankurin to kaminari no zu [between 1868 and 1875]

Why is lightning attracted to the line running from the top of the structure to the water? The notes on the bibliographic page for this woodcut say the man inside the house is supposed to be Benjamin Franklin. Why would Japanese artists portray Franklin’s experiments with electricity in the 1860s and 70s? When did the Japanese start using electricity?

**U.S. Patent Office**

Patent Office files, Washington, D.C., Feb. 29. Employees in the patent office file room. Approximately 2,180,00 patents are kept on file for public use, 2-29-40

What are these people doing? What is a patent, and why is one needed when a new invention is created? If there were over 2 million patents available in 1940, how many are there today? Visit the United States Patent and Trademark Office Web site to learn more!