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

- The Library of Congress wants to hear your opinion of the TPS Journal. To take the survey, click here. Also, be sure to check out the latest issue focused on Common Core Standards.

- Join us on Saturday, November 10th for a special workshop with Dr. Mark Jackson of the MTSU English Department exploring the Library of Congress’s folk music collections!

“AWESOME” SOURCE OF THE MONTH:

[Humorous portrayal of a man who flies with wings attached to his tunic] [between 1800 and 1830]

What is the attraction of flying? As a young child, did you ever try to fly? Would you like to fly using a hang glider or a hot air balloon? Where would you go?

THEME: AVIATION

Feature Article: “Multi-disciplinary Uses of Primary Sources in the Technology Engineering Classroom,” by PERRY LOUDEN, ROCKVALE MIDDLE SCHOOL, RUTHERFORD COUNTY SCHOOLS

No, history and social studies are not the only uses for primary sources. Technology can easily be connected to primary source material to make the past come alive with relevance for the future. In my classroom, primary source images are used to show where we came from and to lead students into higher-order thinking about where we will go next. Additionally, primary sources can be used to recognize principles of technology, engineering, and manufacturing. Because of the abundance and variety of primary sources materials available, it is easy to use them for stimulating student learning in all disciplines. Using sound recordings of Edison’s Amberol records, photographs of the Wright Brothers flying machine, and original Morse code messages combined with vivid images makes for genuine, research-based learning experiences. Primary source images can be used throughout the classroom to make the history of technology come alive and give students a sense of technological change and innovation.

UPCOMING EVENTS:

- October 2—(Nashville) Tennessee Council For History Education Conference. Session times TBA.

- October 26—(Murfreesboro) “The Legacy of Stones River” Workshop from 9 a.m. to 3 p.m. To register email Kira Duke. This workshop is being held in conjunction with the Battle of Stones River Symposium.

- November 8—(Murfreesboro) “Addressing Common Core with Primary Sources and Inquiry” Workshop for elementary school teachers from 3:30 p.m. to 5:30 p.m. To register, email Kira Duke.

- November 10—(Murfreesboro) “Folk Music as Primary Source” Workshop with special guest speaker Dr. Mark Jackson, MTSU English Department. To register, email Kira Duke.

- November 17—(Knoxville) “Digging Deeper with Inquiry” Workshop from 9 a.m. to 3 p.m. EST. Designed for educators with previous TPS experience. Open to educators in grades 4-12. To register, email Kira Duke.
“What’s Next?” is one of the themes I use in my classroom. Timelines—for example, from the invention of the telegraph leading to the iPhone—are used to get students thinking about what will be invented and developed next. Each step along the way resulted from the use of knowledge and resources to solve real-world problems and improve life, which is the true definition of technology.

The final thinking question requires students to formulate opinions on what will come next in ten years or fifty years in response to what came before, what real-world problem is being solved, and how it will improve life. Students make a sketch of their design and label the parts that will make it work.

Curriculum assignments and activities can be built using primary sources. If computers are available, students can work independently or in pairs examining primary source images using the inquiry analysis worksheets. Or, for whole class instruction, the overhead projector can be used. The inquiry analysis worksheet asks these questions: What do you observe? What prior knowledge helps you understand what you see? What questions do you have about the picture? Generally, I follow up these questions with a connection question between the image and the curriculum topic. For instance, in my lesson on building construction, I followed up with, “What materials do you think this building was constructed from?”

Primary source images make great wall coverings and classroom displays. With a little effort, you can have an abundance of instructive posters and displays using a color copier, laminator, and enlarging services. My intention is to cause students to wonder and imagine how things were developed and what things will be next—“What’s Next?” On the first day of class, I have students walk around the classroom, reading the walls and looking at the displays while they complete an “Exploring the Tech Lab” activity. The questions on the activity ask them to find various technological items around the room from the past and the present. “What is the coolest invention you found and why?” Finally, I have them analyze the inventions the previous class came up with, and explain which one they feel is the most potential of becoming a reality in the future. Creating an environment of wonderment and imagination will not just help students to learn facts, but will also inspire in them a desire to learn.

Using the right primary source images with middle school students is not always easy. Some images picture objects that are difficult to distinguish and sometimes contain items these students have never seen or heard of before. Generally, I try to use the following guidelines:

- Images should be clear, containing distinct items that can be explained and discussed.
- Images should relate to current objects the students are familiar with.
- Images should cause students to wonder and easily stir up questions: What is that? What was it used for? Who are those people? Etc.
- Images should lead to higher-order thinking questions: Explain how ….; Discuss the ….; Examine the strengths and weaknesses of ….; Create a ….; and How do you think this image relates to (something of today)?

Primary sources provide a continuum from the past to the present, and using them in multiple ways in the Technology classroom can make learning an incredible experience. Primary sources also encourage cross-disciplinary teaching. In the twenty-first-century school, the reality is that as educators, we are all in it together. Elective teachers must incorporate cross-curriculum activities into their specific programs. Using Library of Congress resources through TPS is an easy way to integrate social studies, science, writing, and language skills into classroom activities.
Lesson Idea—Wright Brothers Illustrated Timeline

This lesson idea is a shortened version of a new, teacher-created lesson plan that will be posted to the TPS-TN Web site in the coming weeks. So, if you’re interested in discussing the Wright Brothers in greater depth with your students, check next month for the finished lesson plan!

Wilbur and Orville Wright were pioneers in the field of flying machines. On December 17, 1903, at Kitty Hawk, North Carolina, the Wright brothers sustained 59 seconds of powered flight, a landmark moment in the history of American technological innovation. Many machine designs and less successful trials, however, led up to this “First Flight.” The process of the invention of the airplane and the achievement of sustained flight is an interesting lesson in engineering design process (EDP) and methods of experimentation.

Students can explore this process by creating a timeline based on the Wright brothers’ experiences. Starting from The Wilbur and Orville Wright Papers collection on the Library of Congress Web site, “Search by Keyword” for each of the following: “1900 glider,” “1901 glider,” “1902 glider,” and “1903 machine.” Each search will yield a group of images; click on “Gallery View” to best view them. Students will choose an image from each of the four searches, save and print them, and use them to create posters or PowerPoint presentations. Students will construct detailed captions for each image based on the title of the photograph, information from The Wilbur and Orville Wright Timeline, and their own observations. Then reflect on these questions as a class: What are the differences in the aircraft from year to year? Why did the 1903 machine succeed where the others failed? How was the engineering design process followed? Students can refer to the NASA Wright Brothers’ site for more on the engineering process (see particularly the pages on Gliders and Powered Aircraft).

This lesson idea can be adapted to meet state curriculum standards for grade 6 Career and Technical Education (Exploring Technology, Inventions and Innovations, Technological Systems) and Science (Embedded Technology & Engineering).

Lesson Idea—The Magic of First Flights

In March 2010, the community of Diggers Rest in Australia celebrated the 100th Anniversary of the first “powered, controlled, sustained flight” in Australia. You have probably heard of the pilot: Harry Houdini! Though he is best known as a magician and escape artist, Houdini was also interested in aviation. He bought his own plane, a French Voisin, at an exhibition in Hamburg, Germany, in December 1909. The famous flight in Australia came on March 18, 1910, after several unsuccessful attempts the previous day. In recognition of Houdini’s achievement, the Aerial League of Australia awarded him a trophy. The Library’s collections include several photographs of Houdini’s flights. These two show the witnesses at one of his first flights. Edward Saint, Bess Houdini’s manager, included several clippings from periodicals reporting the flight in his scrapbooks. Houdini also performed other exhibition flights in Australia.

At the time, everything Houdini did was big news, and any flight would probably have made the papers. But Houdini chose to take his new plane to Australia and become one of several competitors for the Australian “first,” resulting in a “first flight” that is still a subject of controversy today. Who was really first? Why do we continue to attach so much importance to “firsts” in aviation?

Using the Library’s Timeline of Flight, have students choose one of the post-1903 “firsts” to research for a presentation to the class. As part of their presentations, students should answer two questions: What was unique about this “first”? Why does this “first” matter?

This lesson idea can be adapted to meet state curriculum standards for grades 6-8 English (Standard 2: Communication) and High School U. S. History (Eras 7-10).
Amelia Earhart

An outstanding picture of 1937 - tragedy [1937 Dec. 15, from a photograph taken earlier]

Everyone remembers that Amelia Earhart disappeared. The mystery and the search still go on. But what else do you know about Earhart? Why did she decide to become a pilot? What obstacles did she overcome to do that? What did she accomplish before she disappeared? Read more about her life in Meet Amazing Americans: Amelia Earhart.

Aviation in War

Join the air service and serve in France--Do it now / J. Paul Verrees. [1917]

World War I was the first large-scale war in which airplanes were used for attack. Fighter pilots became national heroes. Look at WWI posters and photographs (search “airplanes,” “aviators,” and “air pilots”) and examine how war aircraft and pilots were portrayed in the early days of aviation. How are combat pilots portrayed in the media today?

Hot Air Rises

Hot Air Balloon Jubilee Festival, Decatur, Alabama [2010]

Have students identify the flying apparatus in this image. How is a hot air balloon able to fly? How far can they fly? How do they steer? What type of materials would you need to build a hot air balloon? To learn more about hot air balloons, including the first hot air balloon ride, click here.

Rosie’s Co-workers

The careful hands of women are trained in precise aircraft engine installation duties at Douglas Aircraft Company, Long Beach, Calif. [1942 Oct.]

Though most people think first of “Rosie the Riveter,” women worked on many aspects of aircraft production during World War II. These women are installing an engine. Search the FSA-OWI collection on “women aircraft workers” for more photographs. What other tasks did women perform in the aircraft industry?