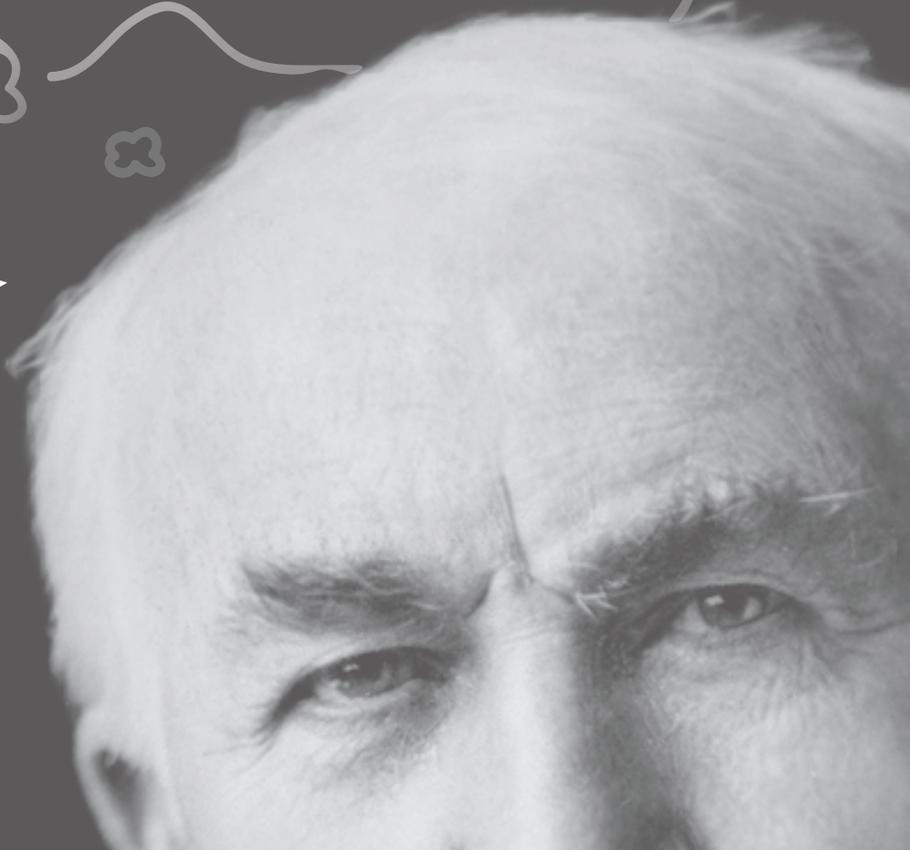




INVENTION OF *Edison*

Book, Music and Lyrics by John Gregor



A FULL MUSICAL PRODUCTION!

**TEACHER'S
GUIDE**

Major support for the Gallery of Heroes program provided by



Additional support provided by



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SCHOOL PROGRAMS and TOURS

MANY EXCITING SCHOOL PROGRAMS

are available at the History Center. Four types of student tours are described below. Please visit the History Center website at www.heinzhistorycenter.org and click on "Education" to learn more about each tour. For each tour theme, you will find a tour overview sheet with a description, objectives, essential questions and a sample of what you might see on the tour.

GUIDED TOURS!

for pre-kindergarten students through 12th grade are one to two hours in length, plus a half hour for lunch, available Monday through Friday, year-round. Students will explore many aspects of life in Western Pennsylvania through docent-guided museum learning, investigative questioning, and hands-on discovery. Discussions of daily life and major events like the British, French and Indian War, Lewis and Clark Expedition, the Civil War, Gilded Age, and World Wars connect students to the everyday and extraordinary lives of local people throughout American history.

Tours generally include a visit to four exhibits (30 minutes per exhibit) that share a common theme. Teachers should choose one of the following themes to focus their tour through Western Pennsylvania history.

THEMES:

- * Immigration and Migration
- * Transportation and Industry
- * African-American Experiences
- * Cultural Geography
- * History Highlights

SELF-GUIDED TOURS

are for teachers who facilitate their own museum experience. We encourage teachers to tour our building in preparation for their visit. Worksheets or scavenger hunts designed by the teacher are highly recommended. Self-guided tours are for a maximum of 200 students, pre-kindergarten students through 12th grade. They are one to two hours in length, plus a half hour for lunch, available Monday through Friday, July through February and on Mondays only during March through June. These tours feature a museum overview, an introduction by a museum educator and include a map of the History Center and exhibit directory.

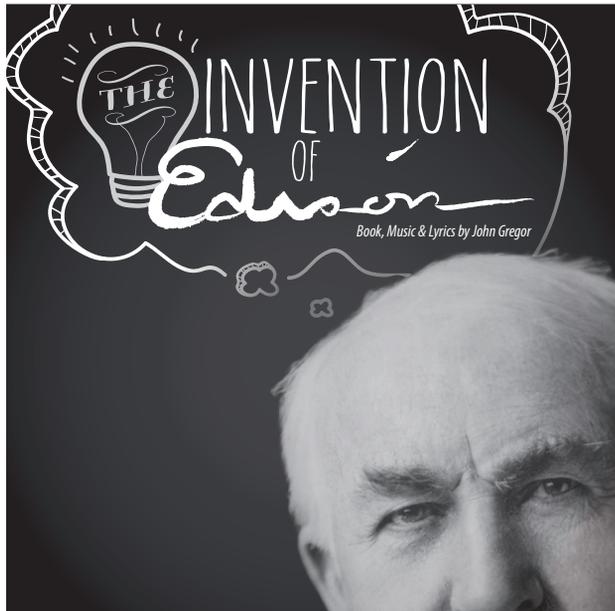
EXPERIENCE CLASSES

provide an opportunity for a class of up to 30 students, pre-kindergarten through 12th grade, to study in-depth with museum experts. They include a tour and/or discussion, hands-on opportunities, and an activity. Each class is two to three hours in length, plus a half hour for lunch, and available Monday through Friday, July through February. Reserve your program at least two months in advance in order to schedule with a curator or archivist.

Early Childhood Education Programs

- for ages two through 2nd Grade - include a story, short tour through the museum and a hands-on craft or activity that makes learning fun as well as meeting early learning standards. Group size is a maximum of 20 students. Tour availability is Monday through Friday, year-round, 9:00am – 12:00pm.

For more information or to schedule a school visit, call the History Center's Group Tour Coordinator at: 412-454-6304.



The Invention of Edison. Book, Music & Lyrics by John Gregor.

This resource guide was created by Art Glaser, Educator and Kate Lukaszewicz, Lead Educator, from the Senator John Heinz History Center. Teacher's Guide published by Pittsburgh CLO, 2013

THOMAS EDISON was a man of perseverance.

Born in Milan, Ohio, Thomas Edison went on to become one of the greatest inventors of major technology including the telegraph, phonograph, electric light bulb, and alkaline storage batteries. Edison's work was dedicated to improving the lives of others. Edison's contributions enhanced the lives of many and even saved the lives of coal miners.



SENATOR JOHN HEINZ
HISTORY CENTER
IN ASSOCIATION WITH THE SMITHSONIAN INSTITUTION

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GOALS:

- To improve students' awareness and understanding of Thomas Edison's impact on the United States and the world
- To improve students' awareness and understanding of the importance of persistence

TEACHER'S PREPARATION

Read the provided background information on Edison's relationship with Mine Safety Appliances and how it was born of a local disaster.

Consider using the included **pre-performance reading activity**, wherein students read a letter from Thomas Edison to the Illinois State Legislature, encouraging them to change a law that made his safety helmets illegal for use in mines.

Consider using the included **photo analysis activity**, wherein students look at images of mining and/or Edison (his inventions and Edison at work) and decipher the context of the image solely by observing it.

Background Information: Mining Disasters, Thomas Edison, and Mine Safety Appliances

In 1910, the federal government founded the United States Bureau of Mines, a response to the 3,000 mining deaths that had occurred in disasters in 1907. In comparison, in 1993, fewer than 100 miners died in accidents, and by 2010 there were fewer than 50 mining related deaths. Today, most mining deaths are isolated accidents, seldom the large disasters that plagued mining in the late 19th and early 20th centuries. Improved safety measures account for the decrease in mine disasters—and Thomas Edison and Mine Safety Appliances, a local Pittsburgh company, were instrumental in those safety measures.

On March 26, 1912, an explosion at the mine in Jed, West Virginia (about 300 miles from Pittsburgh) killed 82 men. Just days before, the mine had been inspected and declared safe. The Youngstown Vindicator reported that the Jed mine "has been operated on a non-union basis. The 150 employees with their families comprised practically the entire population of Jed. When the news of the explosion spread, women and children gathered at the mouth of the mine, terror-stricken for the safety of the entombed. Nearly all of the men are married. Their families refused to leave the shaft, hysterically urging the rescuers to greater efforts." John Ryan, Sr. was among the mine engineers dispatched to the scene during the rescue and recovery efforts. As Ryan recalls, it was when he carried the body of a dying man that he committed his life to ending such mining disasters.

Ryan recruited his colleague, George Deike, and together they founded Mine Safety Appliances in 1914. One of their earliest accomplishments was to persuade Thomas Edison to design the flameless mining helmet. Before this invention, miners wore open flame helmets, which could ignite gasses within the mines, resulting in explosions. Edison's helmet, which relied on battery-fueled light bulbs instead of flames, markedly reduced the occurrence of mining disasters. Nearly every year after receiving the original patent, Edison made improvements to the helmet, proving his commitment to excellence and improving life for people across the world.



Pre-Performance Reading Activity

PRE-READING

Complete pre-reading activities with the students. This could entail:

- Review vocabulary: fatal, authorities, oppose, vengeance, induced
- asking what they know about mining;
- asking how people try to influence the government to act one way or another.

DURING READING

In his letter, Edison describes the process he used to develop his mining helmet. Ask students to identify the steps that Edison took in developing the helmet. You could analogize Edison's process to the scientific process.

1. He identified a problem to solve (the open flame helmet was unsafe for miners)
2. He was persistent in resolving this problem ("I stopped all other experiments and started on the problem.")
3. He produced a practical model and asked for feedback on it.
4. He continued to work on the helmet until he was satisfied with it.
5. He submitted it to the Bureau of Mines for approval.
6. (This content is in the section titled "Edison is 'Amazed.'") Edison made improvements to his lamp annually.

POST-READING

Ask students to identify a problem that needs a solution. Ask them how they would solve that problem, and to list the steps they would take. Encourage them to think of a solution that will help people, just as Edison did.

Visual Thinking Strategies: Photograph Analysis

Photographs are valuable primary sources that can be integrated into a range of lessons. The growth of online archival databases gives you access to thousands of images to use with your students, including local historical photographs, which can be found on the Historic Pittsburgh website. For online photographs with a national scope you can search The Digital Public Library of America (<http://dp.la/>), The Library of Congress (<http://www.loc.gov/pictures/>), or The Henry Ford (<http://www.thehenryford.org/imagesource.aspx>).

Photographs can be analyzed in multiple ways, but all visual analysis begins with a thorough look at the image and recording of what the viewer sees.



The Library of Congress, National Child Labor Committee Collection

Use the following handouts to prompt your students through the visual analysis process:

- Analyzing a Photograph Chart
- Analyzing a Photograph Quadrant

Listed below are some appropriate photos to align with Inventing Edison:

- Digging Coal (battery pack of safety helmet is visible)
- Breast Drilling (lamp on safety helmet is visible)
- West Virginia Boy Inside of a Mine (open flame lamp is visible)
- Frank, a Fourteen-years-old Boy Going Home from the Mine



The Library of Congress, National Child Labor Committee Collection

FOR MORE IMAGE RESOURCES, PLEASE VISIT:
<http://heinzhistorycenter.org/CLOMusical/>

OTHER IDEAS FOR USING PHOTOS

- Begin with the photo covered up (either projected or printed) and slowly uncover portions of the photograph under a document camera. As each piece is revealed, ask students to guess what the photo is depicting. Reveal the final image and discuss how their guesses matched the final image and its historical relevance.
- Select a photograph that students will 'bring to life' by writing a fictional first person account of the people and places they see in the image. This can also be adapted to creating a short dramatic skit that expands on the moment of time captured in the photograph.
- Ask students to identify what must be true. What season is it? How do we know? Who are these people? Why are they here? What does the setting tell us about what is happening here? Emphasize the differences in the mining helmets. For photos showing young boys, ask students why these boys were in mines rather than in classrooms.

FOR MORE IMAGE RESOURCES, PLEASE VISIT:
<http://heinzhistorycenter.org/CLOMusical/>

Analyzing a Photograph

Carefully look at the photograph by breaking the image into four quadrants and record what you see in each section of the image.

People:	People:
Objects:	Objects:
Activities:	Activities:
People:	People:
Objects:	Objects:
Activities:	Activities:

Based on your observations above, what are three things you can infer about the photograph and the time period it was taken?

- 1.
- 2.
- 3.

Analyzing a Photograph

FOR MORE IMAGE RESOURCES, PLEASE VISIT:
<http://heinzhistorycenter.org/CLOMusical/>

Directions: Respond to the following questions and statements for each photograph and specify the evidence for your answer. Finish by creating a title for the image that represents the main theme of the photograph.

	Describe the People in the image	Describe the Environment in the image	What does this image tell you about the time it was taken?	Create a title that represents the image
Photo 1				
Photo 2				
Photo 3				
Photo 4				
Photo 5				





INFORMATION ABOUT MUSICALS

THE MUSICAL!

At a performance you see the finished product—actors and actresses singing and dancing with colorful costumes and scenery. But what goes into the creation of a musical? In this next section, we break down the show into all of its components to give you a better understanding of the magic behind musical theater.

THE WRITERS

Most musicals are broken up into three parts: the Book, the Lyrics and the Music. Often, these are divided among three people. The Playwright writes the script, or the lines that the actors speak. This is referred to as the Book. The Lyricist writes the words that the actors sing. And the Composer writes the music that the band or orchestra plays and the notes that the actors sing. When the three writers work together, it is called a collaboration. The three individuals share ideas and influence each other's writing. They work separately on their jobs and then come together and share their work. They then revise and rewrite until they think the show is ready to be produced.



THEATER ETIQUETTE

The audience is an important part of every performance, whether it be at a symphony, a play or an opera. In a live event, the performers and the audience are partners, reacting with each other in a way that is not possible when seeing a movie or watching television. Your actions affect the success of the theater production. However, attending the theater is not like going to a sporting event. If you talk or move around, you will distract others and you will miss something important.

THE ARTISTIC STAFF

The Director does just what their job sounds like. They direct the play. But there's much more that goes into a director's job. It is the director's responsibility to make sure the show has a successful run from start to finish. First, the director meets with the Costume and Scenery Designers who will build the costumes and scenery. They make sure that the designs match the writers' vision of the play. Assisting the director is the Stage Manager, who schedules meetings between the Designers and Director and rounds up any materials or props that may be needed for the play. The Director hires the Choreographer and the Music Director. The Choreographer creates and teaches all of the dancing or stylized movement for the show. The Music Director teaches all of the music to the performers and usually works with the orchestra. The Stage Crew works back stage and moves scenery and helps the actors change costumes. They also run lights and sound. They are the unsung heroes that you hardly think of when you see a play. But where do they get people to perform in the play? Where do they get the Actors and Actresses?



THE PERFORMERS

An audition is how actors get their jobs. For a musical, the actors come to the theater with a song or two prepared and sing for the Director, Choreographer and Musical Director.

If the artistic staff thinks that they may be right for the show, they are invited to a callback. A callback is a second audition where the performers are asked not only to sing again, but also to read from the script and dance a combination taught by the Choreographer. If they make the cut, they are invited to act in the show.

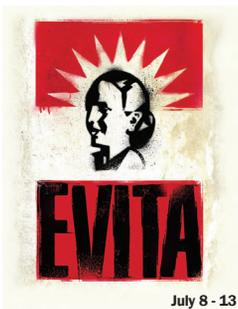
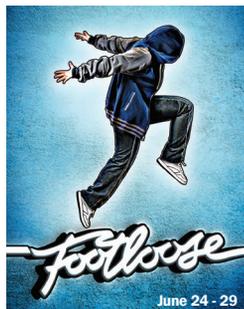
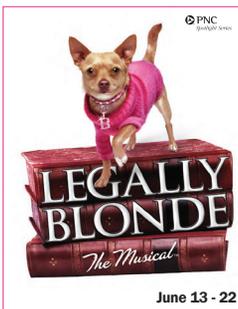
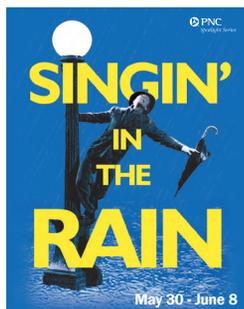


THE REHEARSALS

A rehearsal is the period of time where the actors learn their lines, songs and where to move on the stage—also known as “blocking.” In *The Invention of Edison*, the actors learned it all in five days!!! They are truly professional. The final practice for the show is called the Dress Rehearsal. Here, the actors, artistic staff, crew and designers put it all together to create the “finished” product. The actors wear their costumes and practice on the completed set. The Dress Rehearsal is usually the first and only time they get to run the completed show non-stop without an audience. After the dress rehearsal—it's opening! As you can see, there are quite a lot of things that go into the making of a musical. Truthfully, we've just touched on the many jobs that make up a musical. However, we hope that this has opened your eyes to this theater experience and made you appreciate all the different talents that go into creating a show.

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Penn Ave. Place
130 CLO Academy Way
Pittsburgh, PA 15222
T. 412-281-2234
F. 412-281-2232

PITTSBURGH CLO EDUCATION PROGRAMS

Pittsburgh CLO Academy · Creative Vision · Gallery of Heroes
The Gene Kelly Awards · Mini Stars · Internships · New Horizons



Academy of Musical Theater

Just a few blocks from the bright lights of the Benedum Center, the sound of booming pianos bounces off the brightly painted walls of Pittsburgh CLO Academy of Musical Theater as children of all ages enthusiastically train for their moment in the spotlight. Providing the finest dance, music, and acting training, and affiliated with one of the most respected musical theater organizations in the country, the Pittsburgh CLO Academy encourages both an appreciation for musical theater and a well-rounded education through professional quality courses.

PITTSBURGH CLO ACADEMY SUMMER CAMPS

Pittsburgh CLO Academy's one, two and three-week summer performance camps are designed to present students with a professional environment that combines creativity with skill development and performance opportunity. Working with professional Directors, Music Directors and Choreographers, students will be involved in a musical theater experience with memories to last a lifetime!



PITTSBURGH CLO MINI STARS is an ultra-talented troupe of young performers who showcase their high-energy Broadway song and dance extravaganzas throughout the Tri-State area. Their special brand of musical theater magic has excited hundreds of thousands in their 28-year history.

PITTSBURGH CLO'S GALLERY OF HEROES

Through dramatic sketches and musical vignettes, this program takes its 50-minute mini-musicals to area schools to educate and enlighten students about great historical figures such as Roberto Clemente, the Wright Brothers and Harriet Tubman. Highlighting the lives and accomplishments of significant historical figures, the Gallery of Heroes program offers an entertaining alternative to traditional lectures and books.



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CELEBRATING MUSICAL THEATER

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PITTSBURGH CLO'S GENE KELLY AWARDS, presented in partnership with the University of Pittsburgh, is a Tony Awards®-style celebration of excellence in high school musical theater in Allegheny county. High School theater programs are the clear winners as show business veterans and community celebrities help spread the word about the achievements of area high schools and their musical theater programs. Originated in 1991, the Gene Kelly Awards have become a Pittsburgh tradition. The Best Actor and Best Actress each year go on to compete at The National High School Musical Theater Awards in New York City.

NEW HORIZONS is Pittsburgh CLO's musical theater training program for students with physical and developmental disabilities and autism. Barriers are broken down as the participants realize the power of art, music and theater and their own untapped abilities.

CREATIVE VISION is Pittsburgh CLO's Partnership with the Pittsburgh Public School System and Propel Schools. Training in Dance, Voice and Acting combine with student creativity and accountability to promote participants' interest not only in the arts, but in themselves, their own lives and futures.



"A" IN ARTS is Pittsburgh CLO's way of recognizing excellence in school arts programs. Students trade A's in high school arts classes for tickets to select Pittsburgh CLO productions at the Benedum Center.

STUDENT COUPONS are another way Pittsburgh CLO makes theater accessible to young people. Students see five shows for \$50. For more information, call 412-281-2822.

FOR MORE INFORMATION ABOUT THESE PROGRAMS, CALL 412-281-2234

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