



Working in America:

The Allegheny Portage Railroad and the Immigration Movement

A Teacher's Activity Guide

A partnership was formed with the Johnstown Flood National Memorial and the Johnstown Area Heritage Association. Out of this partnership an interdisciplinary curriculum based program about the Allegheny Portage Railroad and the Immigration Movement was created. Chief of Interpretation Megan O'Malley, Education Specialist Gregory Zaborowski of the National Park Service and Francis Fregly Director of Education of the Johnstown Area Heritage Association along with staff from both organizations worked together to provide a complete educational experience telling the story of the Allegheny Portage Railroad and the immigration movement. This program takes the student from the story's beginnings – immigration, the building of the Mainline Canal, the workers who built it, and to the story's end – the emergence of the Pennsylvania Railroad and the Industrial Revolution.



Working in America Teacher's Activity Guide

EU and EQ
Enduring Understanding
Essential Questions



Social and economic factors can cause immigration to a foreign land resulting in a growth in the labor force and industrial output.

Why is it important to remember past events or lives – or is it meaningless?

How does the history of my community affect my life?

How is being a child in the 1800's different from being a child today – or isn't it?



Working in America Teacher's Activity Guide

Connection To National Standards And State Curriculum Frameworks

Working in America is an interdisciplinary program designed to help students achieve state and national standards in History/Social Studies, Speaking/Listening, Geography, Arts/Humanities, and Technology Education. The working standards vary state to state, but there is substantial agreement on the knowledge and skills students should acquire. The standards listed below, taken from either the national standards or Pennsylvania standards illustrate the primary curriculum links made in *Working in America*.

History and Social Studies

Expansion and Reform (1801-1861)

Standard 1: United States territorial expansion between 1801 and 1861, and how it affected relations with external powers and Native Americans (National)

Standard 2: How the industrial revolution, increasing immigration, the rapid expansion of slavery, and the westward movement changed the lives of Americans and led toward regional tensions (National)

Standard 3: The extension, restriction, and reorganization of political democracy after 1800 (National)

Standard 4: The sources and character of cultural, religious, and social reform movements in the antebellum period (National)

8.1.6 Explain the fundamentals of historical interpretation. (Pennsylvania)

1.6.5 Speaking and Listening

Ask pertinent questions. (Pennsylvania)

Distinguish relevant information ideas and opinions from those that are irrelevant. (Pennsylvania)

Take notes when prompted. (Pennsylvania)

Working in America Teacher's Activity Guide



7.3 Geography

Human Characteristics of Places and Region

7.3.6

Describe the human characteristics of places and regions by their settlement characteristics.

Factors that affect the growth and decline of settlements (transportation)

9.1 Arts and Humanities

9.1.12 Analyze works of art influenced by experiences or historical and cultural events through production, performance or exhibition. (Pennsylvania)

3.6 Technology Education

3.6.7 Explain the factors that were taken into consideration when a specific object was designed. (Pennsylvania)



Working in America Teacher's Activity Guide

Working in America Program Description

Working in America program consists of hands-on presentations, hikes, movies and demonstrations. The workshops and tours provide students with the opportunity to explore the many ways in which immigrants to this country built America. On the field trip, students discover the unique resources of Allegheny Portage Railroad National Historic Site and the Johnstown Area Heritage Center. The hands-on presentations complement the field trip by bringing the significance of these historic resources to life, as students explore different aspects of working class America. On the field trip students participate in a play "An Interview with Sam Lemon," explore the trails "Incline 6: An Interpretive Hike" visit an interpretive ranger "Working the Portage" take a tour of the Immigration Museum and Wagner Ritter House and take a walking tour of Johnstown's West End and much more!

Theme

The Allegheny Portage Railroad and the Immigration Movement was a significant event in the history of the United States during the Industrial Revolution.

Program Objectives

After visiting the Allegheny Portage Railroad and Johnstown Area Heritage Center and completing the activities in this guide, students will be able to do the following:

- The visitor/student will be able to identify two jobs associated with the Allegheny Portage Railroad
- The visitor /student will be able to identify five tools used by artisans that worked at the Allegheny Portage Railroad.
- The visitor/student will be able to name two famous people who travelled on the Allegheny Portage Railroad.
- The visitor/student will be able to identify one reason for the demise of the Allegheny Portage Railroad and Mainline Canal.
- The visitor/student will be able to name 3 modes of travel used by the Mainline Canal.
- The visitor/student will be able to identify the two major cities connected by the Mainline Canal.
- The visitor/student will be able to name two raw materials that Samuel Lemon sold to the railroad.
- Students will be able to identify three of the trees used in building the Allegheny Portage railroad.
- Students will be able to explain why wooden stringers were used on the inclines instead of the stone sleepers used elsewhere in this system.

Working in America Teacher's Activity Guide

Pre-visit Activities



The Allegheny Portage Railroad

Discover the story of the Allegheny Portage Railroad, now a National Park Service historic site, through this 19-minute film. Learn about the early construction, including the building of the first railroad tunnel in America. Experience travel in a different era and learn how this engineering marvel became obsolete in just twenty years by the building of the Horseshoe Curve.

The People that Built America

This is a program where interpreters dressed in period clothing make a school visit and teach the students about coal mining, the Mainline Canal, and iron working.

Activity The students will inspect and handle items associated with the above mentioned professions. These items will be placed on a table and the children will be allowed to handle and inspect them trying to determine who might have used that particular tool or item. Interpreters will share the story of real people that held these professions in Pennsylvania in the 1800s.

Working 9 to 9

Teacher led discussion with students of the article “Working 9 to 9.” This article will introduce students to Johnstown’s early history into the industrial age.

Activity After reading and discussion, students can write their impressions of how life must have been for these immigrants compared to their lives today.



Working in America Teacher's Activity Guide

Post-visit Activities



My Heritage: A Family Tree

Students will learn the history of their own family by researching and completing a family tree.

Activity Have your students as an afterschool assignment talk to their parents and grandparents to discover their roots. Students will learn what countries their ancestors came from and maybe what professions were held by family members.

Letter Home: An Immigrant's Life

After students visit JAHA's immigration sites, each student can take on the role of an immigrant.

Activity Develop a letter to be sent back home to their native country. In the letter, they can reflect on the following:

---Why did they leave their native country?

---What attracted them to the Johnstown region?

---Why did they choose the type of work they did in or around Johnstown?

---What were the living conditions like and how did they adapt to them?

---Will they spend the rest of their life in Johnstown or return to their native country?



Working in America Teacher's Activity Guide

Field Trip Allegheny Portage Railroad



An Interview with Sam Lemon

During this interactive play, students will meet Sam Lemon owner of the Lemon House Tavern. A ranger will portray Sam Lemon and tell the story of the Allegheny Portage Railroad and Mainline Canal.

Activity After the students enter the theater 12 students will be selected to portray newspaper reporters. They will be given a card with questions to ask Sam Lemon. Through the questioning of Sam Lemon the students will learn the story of Lemon's Tavern, the Allegheny Portage Railroad, and the Mainline Canal.

Incline 6: An Interpretive Hike

In this activity the students will hike a trail to the bottom of Incline 6 and hike back up by way of the incline itself. On the way down students will learn about the natural resources used as raw materials in the building of the Allegheny Portage Railroad. On the way up students will learn about the cultural resources related to the incline. They will also have the opportunity to determine the angle of the incline and the change in elevation.

Activity – What's Your Angle?

Before starting on the hike up have the students use an inclinometer to measure the angle of the incline. To use the inclinometer the student should look through the cylinder at the object they are trying to get an angle on. In this case they might use the engine house (or from the engine house use the skew arch bridge). Their partner should look at the string and determine what angle (or number) the string is crossing. Make sure your inclinometer is oriented so the edge that has the cylinder flush with your card is away from you. Do the set-up for "Change in Elevation" here, also make sure they write the angle down, you'll need it to determine the change in elevation

Working in America Teacher's Activity Guide



Activity – Change in Elevation

This activity actually starts at the bottom. To begin they need to know how big their stride is. Do this on the same type of grade as the incline: Have students count the number of steps it takes for them to walk ten feet (walking naturally). They can write down how many steps they go between each stop so they don't lose track. At the top they should divide the total number of steps taken by the number it took for them to go ten feet, they now know how many tens of feet they went. Now plug the numbers into the formula: $\text{Height} = \sin \theta * \text{distance}$, where θ is the angle (this calculation requires a calculator).

Working the Portage

The students will be visited by a ranger or volunteer in period costume of an artisan. The artisan or artisans will do a demonstration of their particular trade (blacksmith, stone cutter, log hewer, rope maker, spinner/weaver, or soldier). Some students will be called upon to assist the artisan in his or her trade.

Activity “Tools of the Trade”

The students will be handed a worksheet with various pictures of tools and equipment. They will be required to match the tools with the artisan. The artisans represented will be: blacksmith, stone cutter, log hewer, rope maker, spinner/weaver, and soldier, the students will be asked to put the correct tools with the correct worker.



Working in America Teacher's Activity Guide

Field Trip Johnstown Area Heritage Center



The Heritage Discovery Center is a five-story, well-marked brick building that's easily seen from Broad Street. Photo: R.A. Maurer.

Immigration Museum: A Day in the life of an Immigrant

The first-floor exhibit America: Through Immigrant Eyes tells a national story in a local context. It captures the imaginations of visitors through its innovative use of interactive media. Rather than simply looking at artifacts, you'll actually experience the sights, sounds and even the smells of immigrants' daily lives, and come away with a more complete understanding of the sacrifices and achievements of these Americans in the making.

Activity During the tour, students or groups will be asked to obtain a character card from the HDC front desk. Each card will take the group on a journey into what life was like in Johnstown, Pa. at the turn of the century for Eastern European Immigrants. Throughout this adventure, guests will learn where these immigrants would work, live, and shop. They will also learn about the hardships many would face as they tried to make a life for themselves in the new world. Although the character cards are fiction, their stories are based on the lives of real immigrants traveling here in the late 18 and early 19 hundreds.

Historic Walking Tour of Johnstown's West End: An Interpretive Hike

The story begins in the Old Country, where you'll learn about the countries and conditions the immigrants were leaving. The exhibit then moves to an interactive video display where you can experience what it was like to be questioned at Ellis Island.

Activity students will explore the various churches, hotels, businesses and homes around the historic neighborhood. Each group will be handed a set of picture cards. Pictured on these cards is one architectural feature from the buildings visited on the tour. The student or group will be asked to identify the building, architectural feature, and ethnic group responsible for its creation on the city landscape. After completion of the walking tour and scavenger hunt, there will be a brief discussion of what each group found during their scavenger hunt.

Working in America Teacher's Activity Guide



Wagner Ritter House Museum

Most house museums showcase an architecturally distinguished home, or were the homes of famous people -- or both. The Wagner-Ritter House and Garden tells a very different story - the story of a modest, working-class family who spent their lives in "the shadow of the mills" in Johnstown's Cambria City.

The Johnstown Area Heritage Association has worked to reconstruct the lives of the Wagners and the Ritters, using tax documents, census information and other public records. The resulting tale of one family's experiences provides a fascinating glimpse into Johnstown's common past - and is told in the house's permanent exhibit, *The World of the Wagners*.

Activity The Wagner Ritter House portion of the tour will contain an exploration of German Immigrant lifestyles in the late 19th and early 20th centuries. Here students will explore the different living spaces of the structure and compare them to their own home. A guide will help illustrate the comparisons of a modern day kitchen, living room (parlor) and bedroom to that of those featured in the Wagner Ritter House. Students will also explore a raised bed garden in the back yard and learn why it was so important to the existence of the family.



The Wagner-Ritter House is complemented by the new visitors center on the left.

Vocabulary

1. *Auger* - a tool used for boring/drilling into wood or earth.
2. *Broad Axe* - An axe with a wide, flat head and a short handle.
3. *Brush Hammer* - Double-sided hammer with a toothed head. Used for touch up on stone work.
4. *Canal Boats* - Boats that were pulled by horse or mule along manmade waterways called canals.
5. *Car Tenders* - assisted in transferring of railroad cars inside the engine house.
6. *Cross Ties* – wooden ties that connect stringers on the incline.
7. *Culverts* - Drains that pass under a road, embankment or railroad.
8. *Felling Axe* - Tool used to cut down or shape timber.
9. *Firemen* - those who tended the fires that fueled the engine house steam engines.
10. *Hand Hewn* - Wood that has been cut or shaped using an axe.
11. *Hitchers* - Men who hitched and unhitched cars to rope, horses, and locomotives along the APRR.
12. *Incline Planes* - Areas of the APRR where ropes raised and lowered railroad cars to different altitudes.
13. *Levels* - Flat portions of the railroad between inclines.
14. *Log Hewers* - Those who specialized in cutting or shaping timber.
15. *Mortar* - A mixture of cement or lime with sand and water that is used in masonry.
16. *Portage* - A track, or route by which boats and supplies are carried overland between two waterways.
17. *Skewed* - Distorted or twisted.
18. *Squib* - The fuse of an explosive charge.

19. *Star Drill* - A drill with a head shaped like a Phillips head screw driver. After each strike with a hammer, the star drill was turned by hand.
20. *Stone Axe* - Axe used to cut stone.
23. *Stone Cutter* - A person who cuts stone with hand tools.
24. *Stone Hammer* - Small Hammer used on stone.
25. *Stone Sleepers* - Early form of railroad ties. The rails were fastened to what is called a chair. The chair is spiked into wooden pegs that fit into two holes on top of each sleeper.
26. *Strap Rail* - A long thin piece of metal which is attached on top of a piece of timber. An early method of train rails.
27. *Stringers* - These were hand hewn pieces of timber that had rails (strap rail) attached to them.
28. *Two-man Crosscut Saw* - A two-person saw designed to cut straight through a tree. Note: There is also a one-man cut saw that workers may have used on the APRR.
29. *Viaducts* - Spans or archways used to carry a road or railroad over a wide valley or waterway or over other roads or railroads.



Erie Canal Packet Boat, 1840 Era.

Vocabulary

30. *Immigration*- is the act of foreigners passing or coming into a country for the purpose of permanent residence.

31. *Ethnicity*- is a group of people whose members identify with each other, through a common heritage, often consisting of a common language, a common culture (often including a shared religion) and an ideology that stresses common ancestry or endogamy

32. *Ellis Island*- is known best as the historical gateway for millions of immigrants to the United States.

33. *Heritage*- the legacy of physical artifacts and intangible attributes of a group or society.

34. *Irish*- are an ethnic group who originate in Ireland, an island in northwestern Europe

35. *Coal*- is a combustible black or brownish-black sedimentary rock normally occurring in rock strata in layers or veins called coal beds or coal seams

36. *Steel*- is an alloy that consists mostly of iron and has carbon content between 0.2% and 2.1% by weight, depending on the grade

37. *Tenements*- in most English-speaking areas, a substandard multi-family dwelling, usually old, occupied by the poor.

38. *Canal*- an artificial waterway for navigation, *irrigation*

39. *Community*- a social group of any size whose members reside in a specific locality, share government, and often has a common cultural and historical heritage.

40. *Old Country*- Country of origin for immigrants who came to America.

41. *Steelworker*- laborer in one of the various places in a steel mill

42. *Coal Miner*- (pick miner) loosens coal with picks, or uses explosives to blast coal into coal cars.

43. *Foreman*- in charge of all workings and workers in the mine

45. *Mine Inspector*- government employee who checks to be sure mine is obeying safety laws.

46. *Blacksmith*-shapes hot iron or steel by hammering by hand or machine.



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Bibliography

American Immigration Law Foundation

Immigration Resource guide for K-12 Educators

www.aifl.org/teach/resources.shtml

The Library of Congress

The Learning Page

Port of Entry: Immigration Unit

<http://memory.loc.gov/learn/port/teacher.html>

National History Education Clearinghouse

Teaching Materials—many selections of Lesson Plans on Immigration and other history education topics

http://teaching_history.org

Harvard University Open Collections Program Women Working, 1800- 1930

Immigration to the United States, 1789- 1930

<http://ocp.hul.harvard.edu/>

Thomas, William Zanaiecki Floraian, *The Polish Peasant in Europe and America.*



Evaluation Questions for Teachers

1. Does “Working in America” target State and National Standards in such a way that you and your school could/would make it part of your curriculum?

2. Are the activities worthwhile, interesting and age appropriate for your students?

3. Do you plan to use the post-visit activities after taking part in a field trip to our sites?

4. Is there anything you would like to see added in our program?

5. Does the Activity Guide convey the purpose of the program in a clear and understanding way?

6. Have you been on a field trip or had a ranger come into your classroom? If so explain the experience and whether it was beneficial to you and your students.

7. Are program themes, goals, and objectives clear and appropriate to your classroom needs?

8. If this program is not of interest to you and your school what could we provide for you to assist you in teaching the story of Transportation and Immigration?

9. What aspect of the Activity Guide is most appealing to you as a teacher?

10. What aspect of the Activity Guide is least appealing to you as a teacher?

LIST OF APPENDICES

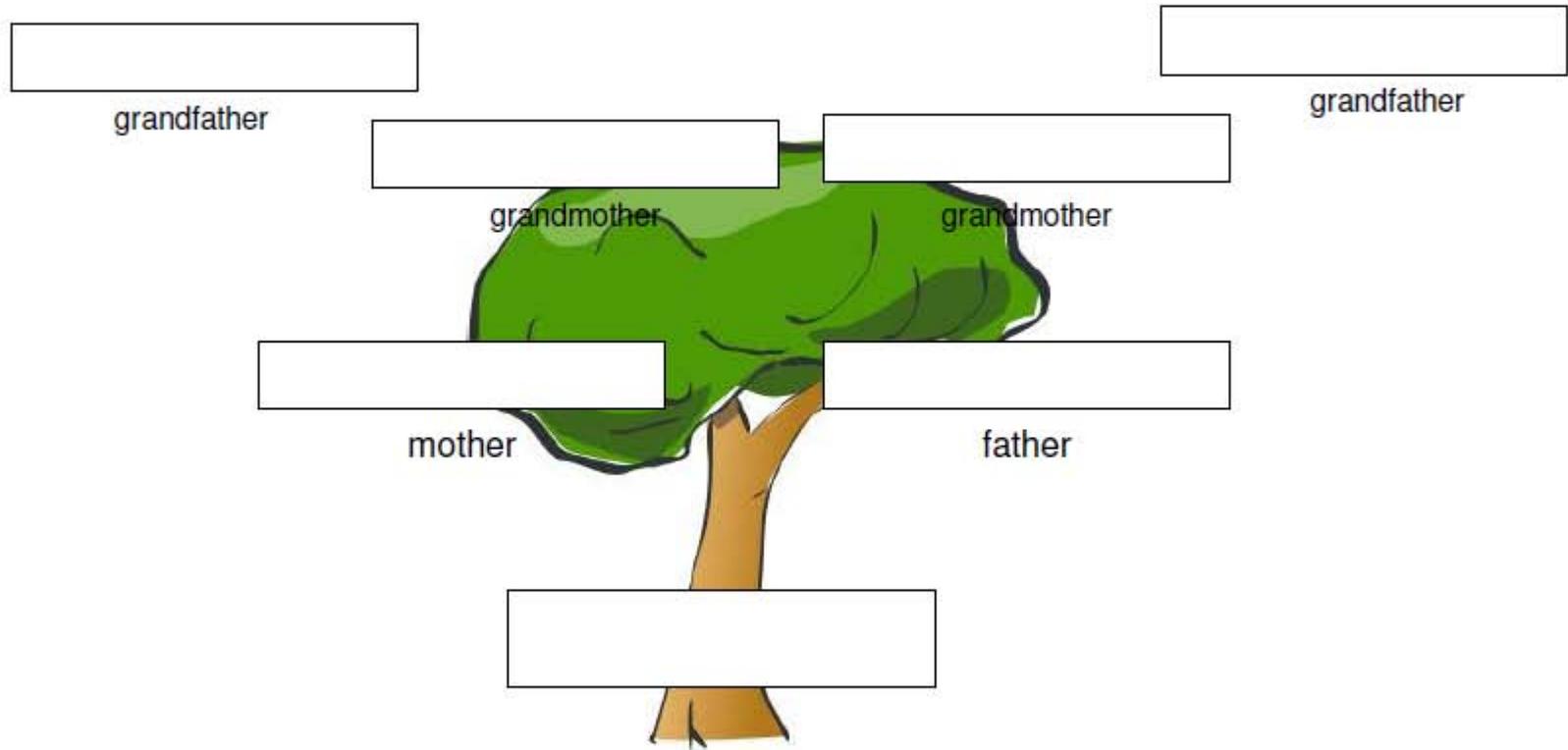
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In the train station, visitors see their characters arrive in Johnstown to start new lives here.

Family Tree



Letters from Home

Letters from the "Old Country"

Even after getting settled, most migrants had strong ties "back home" -- whether across the ocean or across the Mason-Dixon line. Letters passed back and forth between those that left and those that stayed behind. The letters that survived give insight into why people choose to migrate, why some stayed, and why some returned.

Go to the source

- What hints do these letters give about immigrants' personal life?
- In which letters do the families agree with the immigrants' reasons for leaving? Which families do not support the immigrants' decision to leave? Why?
- Which letters show the strongest ties home? How are they staying connected?
- What about their immigrant relatives: do families back home worry about? What advice do they give their immigrant relatives?

Take it further

- Does your family stay in touch with your family back in the "Old Country"? What usually happens over time to an immigrant's ties to home? Why?

From Poland to the USA

Authors Witold Kula, Nina Assorodobra-Kula, Marcin Kula, and editor Josephine Wtulich published the following excerpts of letters to immigrants in America from their families in Poland in the book *Writing Home: Immigrants in Brazil and the United States 1890-1891*.

Josef Cugowski to his brother and sister-in-law in America

Poland
September 7, 1907

You know how it was when you were leaving, and now things don't seem to get better but rather worse. The trade and industry are stopping, particularly now when winter approaches. Our factory goes on very badly . . . and you know, my dear ones, that there is a numerous family to nourish, so there is enough to think of when one cannot earn. And what is the worst, there is no place to go, for in the whole country it is the same, in some localities still worse. Food has become much dearer . . . Everything costs about 1/3 more than before. It is because in many localities hail has beaten the crops, in other localities they have rotted, in Russia and Lithuania there were strikes in many manors, and the crops were left in the field.

Jozef

Tomasz Barszczewski to his brother Stanislaw Barszczewski in America

Poland
Nov. 17, 1906

Now everything is dear, from salt and matches up to the coat on your shoulders and the wagon of firewood at the market; cheap is only the life of the poor man, because it is taken away without question, without witnesses, without court.

Probably you are longing there, dear brother, and sometimes sorrowful. I anticipate that although such a great distance of land and sea separates you, still in your thought you visit your country, your relatives, and friends; you remember their radiant moments and the painful hours, you imagine the circumstances met long ago; your native country house with its straw-roof and its dear inhabitants seems lovely to you; perhaps even the curved ridge between the fields or a naked stone upon the stripped soil reminds you sweetly of some mystery of the past. . . .

Tomasz

Antone and Paulina Barszczewski to brother in America

Poland
May 19, 1914

In our village they are making colonies a new type of peasant farm, and it is very difficult to live. I was much better off before, because I had no trouble about pasture, but profited from the common pasture But now everybody has his own piece of land in a single lot, and everybody pastures upon his own lot; and as to me, you know that my whole property is a garden, where I must live and plant, and I have no place to pasture.

Antone and Paulina

Halicki family letters from mother to her son Polikarp in America

Poland
October 1912

Dear Son,

I thank you for your letter, for which I waited with longing. We knew that one ship sunk with the men. Glory be to God that you are healthy and happy. I beg you, my dear son, write to us as often as you can, you know how glad I am when I can speak with you at least by letters . . .

Mother

Poland
New Year 1913

Dear Son,

I was very glad to receive the money, but I felt how parsimoniously you must have lived, dear son, wishing to help me for the holidays. Even if I had not the lord's help [probably a widow's pension], I should not ask anything from you. Try only to put some money aside and to come back as soon as possible to our country, at least for a short time.

Mother

Poland
February 1913

Dear and Beloved Son,

I received the money for which I send you a hearty 'God reward.' I rejoice very much, dear child, that being in such a far world, you nevertheless remember about me. I doubt whether any of your brothers will do it. But certainly God will reward you.

Mother

Poland
June 1913

Dear Son,

...We received your photographs. They are so natural that Stasia and Mania kissed them. They put them upon a table and adorn you every day with fresh flowers.... People don't cease to wonder that you remember me so and send money so often.

Mother

Poland
September 1913

Dear Son,

... I received the money for which I thank you heartily. I think, and I explain to your brothers and sisters, how sparing and industrious you must be. The postmen wonder, and some people even envy me. You intended 10 marks for Michal [for his name-day]. You have a truly brotherly heart. ... This very day I told all my children that if I turn the money which you send me to the benefit of all of them they all should be grateful to you... God reward you for having remembered your mother's name-day in this far world.

Mother

Why don't you write?



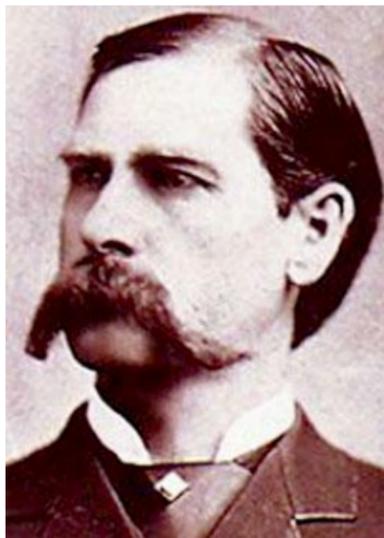
Question 1

Hello! My name is ____ (say your name) _____ and I am a reporter with the Pittsburgh Post Gazette. Sir are you Samuel Lemon the owner of the stone tavern on the summit at incline plane six?



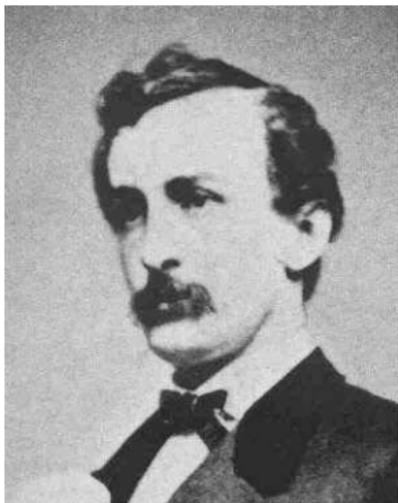
Question 2

Hello! My name is ____ (say your name) _____ and I am a reporter with the Ebensburg Sky. Mr. Lemon I am writing a story about the Allegheny Portage Railroad and Mainline Canal. You played an important role in that story. Didn't you build this beautiful tavern here at the summit of this mountain?



Question 3

*Hello! My name is ____ (say your name)
_____ and I am a reporter with the
Harper's Weekly. Is this the original tavern that travelers
heading east and west frequented?*



Question 4

*Hello! My name is ____ (say your name)
_____ and I am a reporter with the Mountain
Herald. Do you own the land here where the Portage Railroad
was being constructed?*



Question 5

Hello! My name is ____ (say your name)

*_____ and I am a reporter with the
Johnstown Tribune. Mr. Lemon why did the State of
Pennsylvania build the Mainline?*



Question 6

Hello! My name is ___ (say your name)

_____ and I am a reporter with the New York Times. Mr. Lemon can you describe for me exactly how a person would travel across the state on the Allegheny Portage Railroad and Mainline Canal?



Question 7

*Hello! My name is ____ (say your name)
_____ and I am a reporter with the Frank
Leslie's Illustrated Magazine. Mr. Lemon was it safe to travel?
Where there many accidents?*



Question 8

*Hello! My name is ____ (say your name)
_____ and I am a reporter with the
Altoona Mirror. Mr. Lemon I had read a story about two
outlaws by the name of Flanagan who worked for the
Allegheny Portage Railroad. What do you know about
them?*



Question 9

*Hello! My name is ____ (say your name)
_____ and I am a reporter with the
Somerset Herald. Mr. Lemon I had also heard that many
famous people had traveled on the Allegheny Portage
Railroad, - Henry Clay, Abraham Lincoln, Ulysses S.
Grant, Davy Crockett, and Santa Anna. Is this true?*



Question 10

*Hello! My name is ____ (say your name)
_____ and I am a reporter with the Pittsburgh
Post Gazette Mr. Lemon I had read that you became very wealthy
from your dealings with the railroad. Is this true?*



Question 11

Hello! My name is ____ (say your name)

_____ and I am a reporter with the Baltimore Sun. Mr. Lemon, tell me what you know about the Underground Railroad. I heard that there was some activity out here along the Portage Railroad.



Question 12

*Hello! My name is ____ (say your name)
_____ and I am a reporter with the Ebensburg
Sky. I certainly have enough information to write a wonderful
story about this very interesting canal and railroad. One more
question Mr. Lemon what happened to the canal and railroad? It
was doing so well!*

Incline 6: An Interpretive Hike

In this activity the students will hike a trail to the bottom of Incline 6 and hike back up by way of the incline itself. On the way down students will learn about the natural resources used as raw materials in the building of the Allegheny Portage Railroad. On the way up students will learn about the cultural resources related to the incline. They will also have the opportunity to determine the angle of the incline and the change in elevation.

Goal

The visitor/student will have a better understanding of the Allegheny Portage Railroad, Mainline Canal and life of the workers and people along the way

Objectives

Students will be able to identify three of the trees used in building the Allegheny Portage railroad.

Students will be able to explain why wooden stringers were used on the inclines instead of the stone sleepers used elsewhere in this system.

Hike down

On the way down the trail have students see how many of each type of tree they can find from the three outlines on their handouts.

Resource #1 – Sandstone

Sandstone was used to make the stone sleepers. The stone quarry here at incline 6 is still evident as you walk the boardwalk between the visitor center and the engine house.

Resource #2 – Hardwood Trees

Any hardwood could have been used to make the wooden stringers found on the inclines. The three most common are the Black Locust, White Oak, and Eastern Hemlock. Softwoods such as pine species would not have lasted.

Hike up

Stop for the following resources and activities.

Resource #1 – Skew Arch Bridge

The hitching shed for the incline was on the other side of the skew arch bridge so from this point looking up the students can see almost the entirety of incline 6.

Activity – What's Your Angle

Before starting on the hike up have the students use an inclinometer to measure the angle of the incline. To use the inclinometer the student should look through the cylinder at the object they are trying to get an angle on. In this case they might use the engine house (or from the engine house use the skew arch bridge). Their partner should look at the string and determine what angle (or number) the string is crossing. Make sure your inclinometer is oriented so the edge that has the cylinder flush with your card is

away from you. Do the set-up for “Change in Elevation” here, also make sure they write the angle down, you’ll need it to determine the change in elevation.

Resource #2 – Trees

Having trees nearby was important to the construction of the incline because wooden (?) were used in place of stone sleepers on the inclines. The stone sleepers weight caused them to shift on inclines making them unusable.

Resource #3 – Rails

Replica of original: The parts of the track on the inclines and how it was different from the parts used on the flat sections.

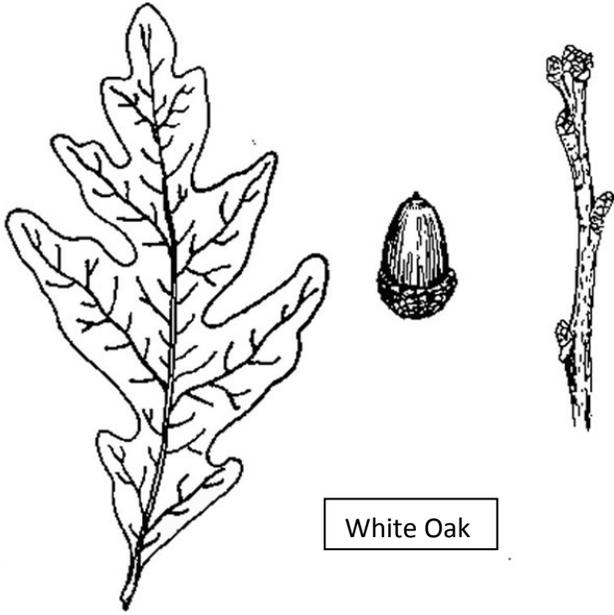
Activity – Change in Elevation

This activity actually starts at the bottom. To begin they need to know how big their stride is. Do this on the same type of grade as the incline: Have students count the number of steps it takes for them to walk ten feet (walking naturally). They can write down how many steps they go between each stop so they don’t lose track. At the top they should divide the total number of steps taken by the number it took for them to go ten feet, they now know how many tens of feet they went. Now plug the numbers into the formula: $\text{Height} = \sin \theta * \text{distance}$, where θ is the angle (this calculation requires a calculator).

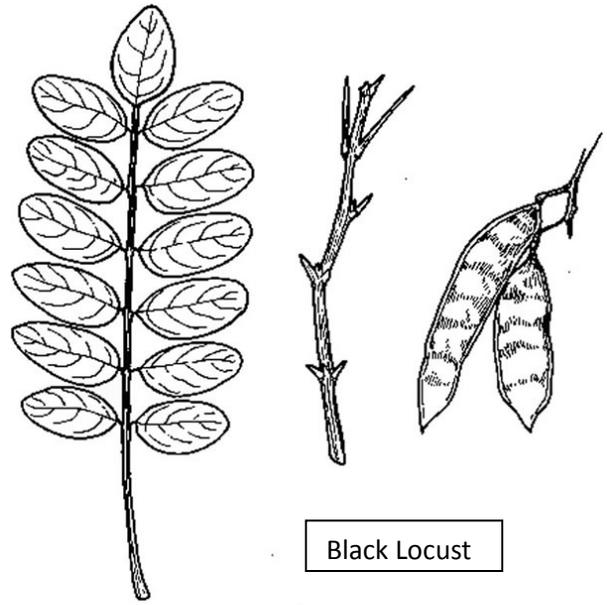
Resource #4 – Engine House

Replica of original: Show students the ropes to give them an idea of how thick they would have been. How the incline works with one car going up and one going down acting as a sort of counterweight for each other (unless already done at exhibit in visitor center).

Leaf Outlines



White Oak



Black Locust



Eastern Hemlock

Making an Inclinometer

Here's how to make a tool that you can use to measure how tall something is—or how high a rocket or kite flies. It is also a tool used to determine the slope (or angle) of an object.

Supplies (per student or group)

Copy of Protractor
Scissors
Clear Tape
3x5 card
Hole punch
50 cm of string
Washer (or other small weight with a hole)
Scrap Paper (or straw)

Directions

Step 1

Carefully cut out the protractor so there is a straight line along the flat edge.

Step 2

Tape the protractor to the 3x5 card so the straight side of the protractor matches up with the long side of the card

Step 3

Use the hole punch to punch a hole through the circle on the protractor.

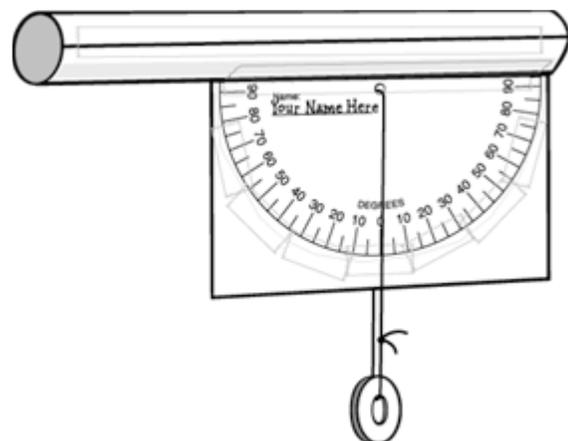
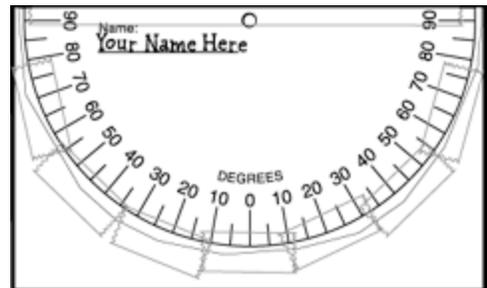
Step 4

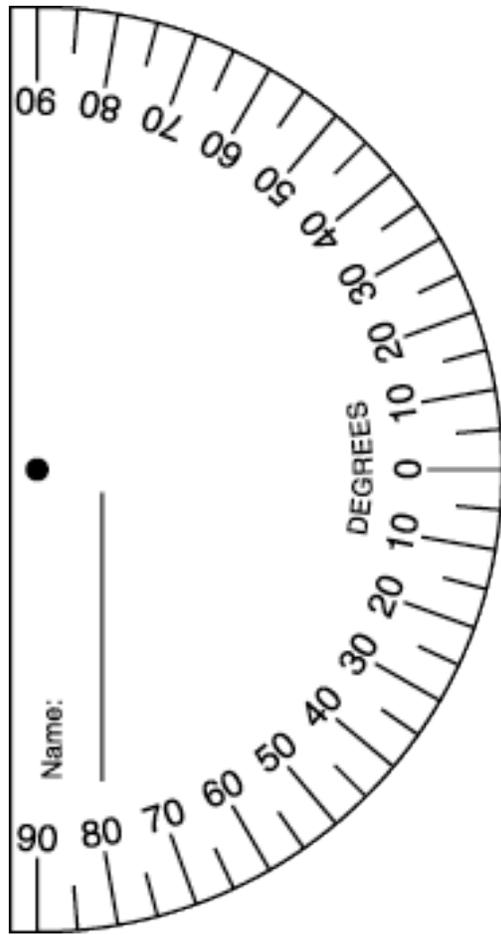
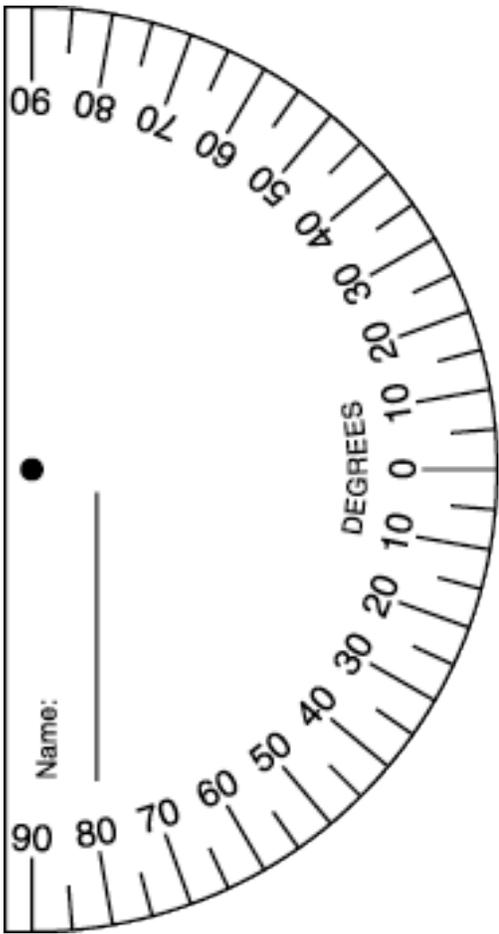
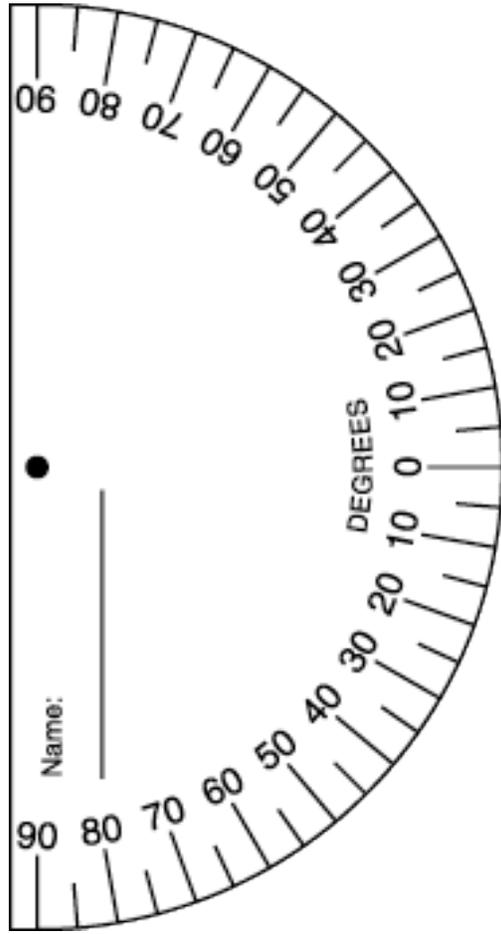
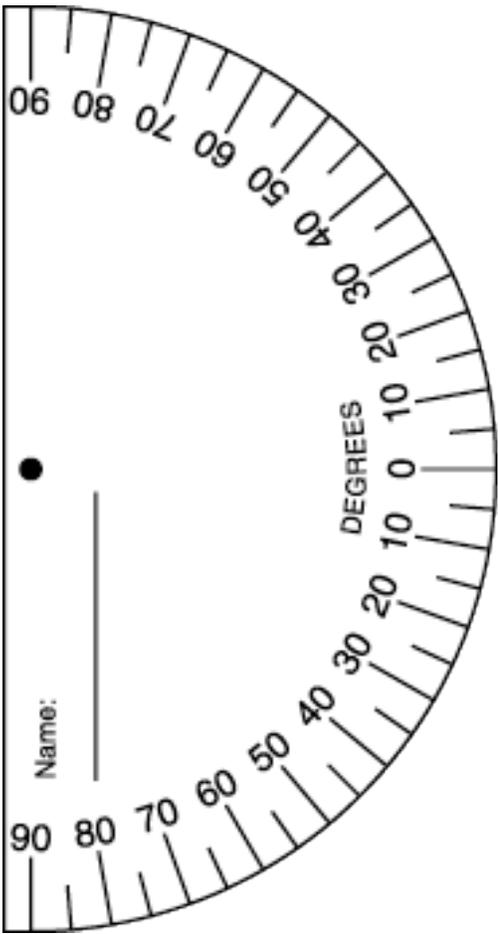
Push one end of the string through the hole and through the washer. Tie the two ends of the string together making a loop on which the washer can slide freely.

Step 5

Roll a sheet of paper into a cylinder that's 8 ½ inches long and about 1 inch across. Put tape on the seam so the paper stays rolled, then tape this cylinder to the card along the straight edge of the protractor (a straight straw can be used instead). One end of the cylinder should line up with the edge of the card.

For more ways to use an inclinometer in the classroom see the Exploratorium's Height Site on the Exploratorium's website.







These men are at the top of the blast furnace. Notice the two handcarts in the picture that the men used to load items into the furnace.

Working 9 to 9

A very different workplace

The workplace that new immigrants entered when they came to the U.S. was very different than anything they had known before. For that matter, the world of work was changing so rapidly in the 1800s and early 1900s that it was different from what **anyone** had known before! In fact, the huge changes in how people (and nations) made a living how and how this work was done, were the major PULL factor (see the Push and Pull thread) attracting immigrants to the United States.

Still, few who came in the great immigration wave of 1890 through 1914 were quite prepared for what they found. Most from eastern and southern Europe had been peasant farmers and herders whose lives ebbed and flowed with the passing of the seasons. Craftsmen and merchants owned their own businesses, living and working under the same roof. Community life revolved around church and synagogue and the calendar around religious holidays. Without question, they worked hard, but celebrating a multitude of saints' feast days and other holidays, broke the monotony. Working from sunup to sundown was grueling during spring planting and fall harvest, but the work eased with the dying of light in the winter.

Culture shock for new immigrants

Imagine the culture shock these folks had as immigrants! Their new jobs were ruled by the company time clock, not the sun and seasons. Every day, not just long summer days, was 12 hours long; every week was 6 days long. Half the time, those 12 hours were nighttime hours, because mills and mines worked round the clock. Workers labored the day shift for two weeks, then the night shift for two weeks, with a 24-hour shift between. Workers had no "vacation" except lay-offs without pay when business was bad. There were few holidays and no paid holidays. But they still didn't make enough money to pay their rent and buy food for their families.

The work was dangerous, too -- especially for "greenhorns," as newcomers were called. Explosive gasses and cave-ins made miners' families dread the disaster whistle. Steelworkers had to avoid cranes moving hunks of hot steel weighing tons or be crushed. Molten steel could splash and burn. Most horribly, when workers fell into a furnace, nobody was left for a funeral! Out of respect, the whole load of iron or steel was buried right at the mill site.

Workers hurt on the job didn't receive disability, though Cambria Iron and Steel Company did build a company hospital to treat injured employees. Coalmines had infirmaries and called in their company doctor to treat injuries (of course, the company deducted several dollars from the miners' pay every month to pay the doctor!).

Huge factories where companies hired thousands of workers were new. With the old way of manufacturing by hand, workers worked right beside their bosses. Having children help wasn't so bad when or older brothers and sisters were nearby and made sure they were safe. But when thousands of workers labored in hot factories or cold mines far from their bosses who worked in comfortable offices, no one knew each other personally. It became easier to think of workers as "labor" -- a cost of manufacturing -- not as people. Many companies (though not all) tried to pay less and less so they could sell more and more cheap products. Instead of getting raises, workers sometimes had to suffer pay cuts!

Companies were free to treat workers however they wished. There was no minimum wage. There was no minimum workday. When fathers weren't paid enough, many times children had to go to work to help feed the family. It was a hard decision that many families had to make.

These wages and work conditions sound unfair and wrong to us today. But in 1900 it wasn't illegal. Nothing prevented the companies from making all their decisions based on making as

much money as possible, even if workers. Until a few people, then a few more, started "making noise" to make a change!

Workers taking care of themselves

Beneficial societies

If workers were killed, companies might give widows a small amount of money to cover burial costs. After that, there was nothing. Companies didn't think they needed to help support a worker's family after they died in an accident on the job. Ethnic groups settling into their new homes saw the need and organized "beneficial societies" to help. Similar to insurance companies (in fact, many of them later became insurance companies); these societies collected dues from their members every month and saved the money in a special fund. If one of their members was injured or killed on the job, they or their families received payments (benefits) from the fund. (Learn more about beneficial societies in the "Making a Life" thread.)

Workers unite

Some of the workers tried to talk to their bosses about being treated more fairly. The bosses didn't think the workers had the right to tell them how to run their businesses.

By themselves workers didn't have much power to change things. After all, if they told their bosses they didn't want to work 12 hour days for very little pay, their bosses could just say, "Fine, then go find another job!" They would just hire some new immigrant.

But what if every worker in the factory said they wouldn't work 12 hours a day for low pay? What if they were willing to all walk off the job at once? Then the factory would have to either close down or hire many new workers all at once.

When workers band together to change their pay and working conditions, it is called a "union." Instead of every single worker asking his boss for a raise, union representatives would meet with the company and discuss a "contract" that both sides could agree to. It was called "collective bargaining." Everyone in the union benefited from the new wages or hours. It is easy to see why companies didn't like unions -- they would rather not give **anyone** a raise, much less **everyone**!

Strikes

What happened, then, when companies refused unions' request for higher wages or shorter hours? The workers found a way to make them see how important they were to the business they stopped working until the bosses would listen to what they had to say! This kind of protest was called a "strike."

Neither the companies nor the unions wanted a strike.

A company could easily hire replacements if just a few workers quit. But if a large number quit, the mill or mine had to shut down! Blast furnaces went cold; mines went quiet; orders couldn't be filled; customers stopped sending money.

Workers would rather not strike because they wouldn't be paid for the time they were on strike. They might even lose their jobs completely, if the company hired enough "strike breakers" (called "scabs" by the union members).

To keep strikebreakers from coming in, striking union members would surround their workplace in a "picket line" to convince replacement workers not to cross into the mill or mine. They used signs and songs to explain why they were striking. Some strikes got very ugly at this point. Workers might use their fists to keep "scabs" from crossing the picket line. Companies hired private police "Coal and Iron Police" to break up the picket lines to let strikebreakers through. Some of these "policemen" were just men who owned guns and like to use them. They often used violence against strikers, including murder. Union members called them "goons" or "thugs."

Company owners tried to keep unions from organizing in the first place. They could fire the union organizers. They could send the Coal and Iron Police to break up union meetings. If union members lived in company houses, the police would evict them and their families. Evicted families would live in tents off company property to embarrass the owners. Violence broke out many times. Some early union members paid their dues with their lives

The unions would keep organizing, though. Before long, they had so many members that factory and mine owners couldn't ignore them or use violence against them. Changes came slowly, but eventually, they won an eight-hour workday and higher wages.

Reformers: Making changes when you aren't in charge

Workers weren't alone in trying to change how they were treated. Others also noticed how out of balance things had become after the rapid changes of the 1800s. Company owners were getting richer while workers were getting poorer and sicker.

One way people found to make changes was to investigate the truth about what was going on. Some were reporters. Some were social workers. They all published what they found out. It wasn't pretty!

"Muckrakers"

Reporters who tried to find out and report what was wrong in business and government. Their enemies (mostly people in business and government!) called them *muckrakers* because they dug through the "dirt."

Ida Tarbell was Pennsylvania's most famous muckraker. She grew up in Titusville, in the middle of Pennsylvania's oil industry. She wrote about how John D. Rockefeller formed his company Standard Oil by putting smaller oil companies out of business. Because of her article, the Supreme Court made the huge Standard Oil break into smaller companies.

Not all muckrakers reporting on the problems in Pennsylvania were from Pennsylvania. **Lewis Hine** used his camera to make changes. His photo stories from Pennsylvania brought attention to problems that needed to be solved. One of his most famous photographs "Breaker Boys Inside the Coal Breaker" was taken in eastern Pennsylvania's anthracite (hard coal) coal region.

Stories and pictures like these, even if they weren't about Johnstown, helped people in Johnstown. When lawmakers read stories about the breaker boys in eastern Pennsylvania's mines, they started to worry about the children who worked in mines in western Pennsylvania, too. New "anti-trust" laws were passed to keep all businesses, including steel and railroads, from getting so big that it was unfair to smaller companies.

Social Workers

Another group of people called social workers studied the people who could barely make a living even though they were working 12 hours a day 6 days a week. The social workers spent time in workers homes, interviewing family members, finding out what they ate and what it cost. "The Pittsburgh Survey," one of the largest studies ever made on a city, brought attention to how steelworkers lived, not only in Pittsburgh, but also all over Pennsylvania.

Johnstown was the subject of an important study on infant mortality. *Social worker Ewa xxxxx wanted to find out why so many children of immigrants died when they were just babies. She found out....[summarize]*

When these surveys were published, they proved that low wages weren't just about math and money -- they were about real men, women and children who couldn't afford to buy milk or meat, who had to send kids to work instead of school, whose babies died from unsanitary housing.

After reporting the problems, social workers tried to help through charities. They started "settlement houses" to help immigrants settle in, learn English, and keep their babies healthy. Special "fresh air farms" let children get out of the smoky, crowded neighborhoods and get exercise out in the country.

Lawmakers

When people read these stories and reports, many were embarrassed about such things happening in Pennsylvania. The state's General Assembly passed laws making it illegal to hire children under the age of 12 (later raised to age 16). They required children to stay in school. Cities built playgrounds and gave free milk to poor families with children.

Cities also started to listen to scientists who warned about germs in the untreated river water. Many people were getting sick with deadly diseases. Building water and sewage treatment plants saved many lives by killing germs in river water before it was piped to the cities.

Change -- finally

Slowly, but surely, the lives of workers got better. With higher wages, they could save to buy their own houses instead of living in crowded companying houses. Children could stay in school instead of going to work to help support their families. When they did get old enough to get jobs in the mills and mines, they only worked 8 hours a day, five days a week. They wore hard hats and special safety clothing and equipment.



Take on a role

When you come to the Johnstown Heritage Discovery Center you will assume the role of one of the eight fictional people below as you go through the exhibit. They represent the thousands of immigrants who came to Johnstown and the surrounding area to make a new life.



Stefan Kohanek

Age: 21

Status: Unmarried migrant
farmhand

Country: Poland



Maria Catania

Age: 19

Status: Unmarried peasant

Country: Italy



Prokop Kalina

Age: 29

Status: Married butcher

Country: Slovakia



Katerina Szatmary

Age: 30

Status: Married goose farmer

Country: Hungary



Moshe Rosenbaum

Age: 36

Status: Married
shopkeeper

Country: Russia

Paint Creek near
Johnstown



Josef Korzeniowski

Age: 12

Status: Peasant boy

Country: Poland

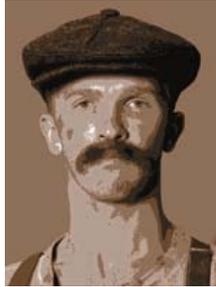


Anna Szechenyi

Age: 9

Status: Peasant girl

Country: Slovakia



Andrej Hlink

Age: 24

Status: Unmarried migrant
farmhand

Country: Bohemia

Steeple Chase

THESE STEEPLES, towers, and domes watch over Cambria City. List each church and its address:

1. _____

2. _____

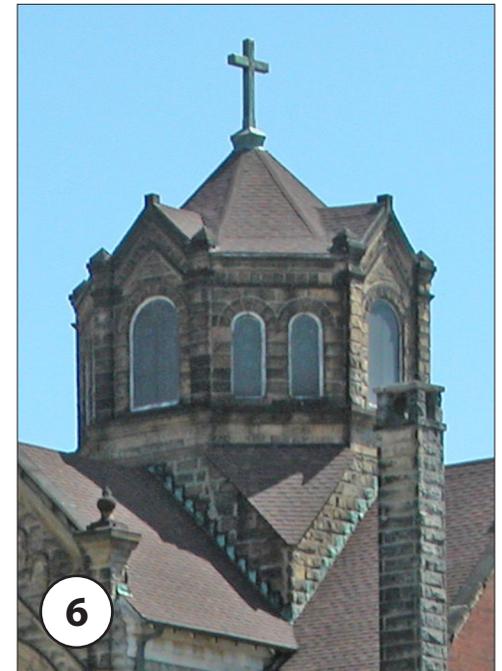
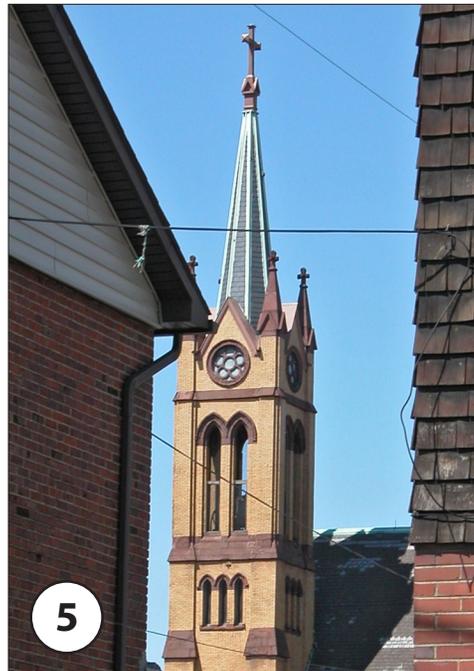
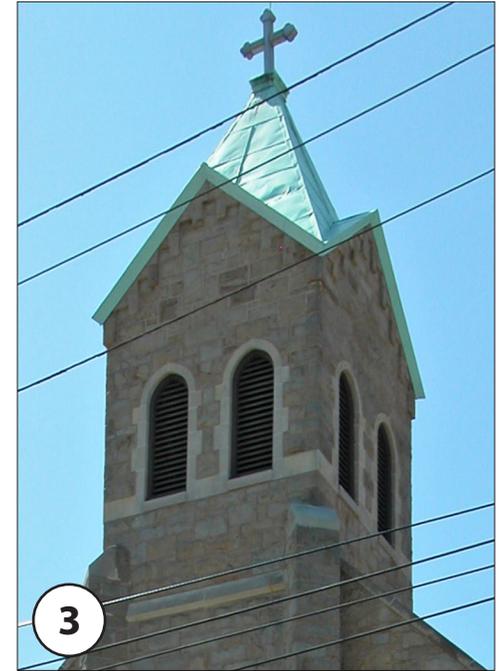
3. _____

4. _____

5. _____

6. _____

- **WHAT** materials were used to build your steeple? How does it fit into its building (beside, on top or part of roof)
- **WHY** are steeples, domes, and towers popular in religious buildings?
- **WHICH** spires are fanciest? Which are plain? Which faiths use more decoration? Which use less?
- **HOW** are domes, steeples and towers different? In construction? In function? In meaning?



Steeple Chase

THESE STEEPLES, towers, and domes watch over Cambria City. List each church and its address:

- 7. _____
- _____
- 8. _____
- _____
- 9. _____
- _____
- 10. _____
- _____
- 11. _____
- _____
- 12. _____
- _____

- **WHAT** materials were used to build your steeple? How does it fit into its building (beside, on top or part of roof)
- **WHY** are steeples, domes, and towers popular in religious buildings?
- **WHICH** spires are fanciest? Which are plain? Which faiths use more decoration? Which use less?
- **HOW** are domes, steeples and towers different? In construction? In function? In meaning?

