

Steel Unit

The Basics

Time Required

4 days

Subject Areas

5th Grade American History

Integrated Unit on Physical Science and Simple Machines

Development of the Industrial U.S., 1870-1900

Skills

Song analysis

Song comparison

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The Lesson

Introduction

This unit will provide an overview of the history surrounding the steel industry in Western Pennsylvania. Students will study immigration to manufacturing centers, union/labor history (with an emphasis on the Homestead Steel Strike of 1892,) how steel is manufactured, and the decline of steel in the U.S. The topics in this unit will be covered using a multi-modal approach, including imaginative activities, creative writing, reading, and analyzing photographs, video clips, and song.

Learning Objectives

The student will be able to answer the question “what is an immigrant and why might a person choose to immigrate to a new country?”

The student will demonstrate knowledge of some basic information about the experience of a particular immigrant group by sharing a poster project.

The student will be able to answer the question “what is a union and why might workers wish to be part of a union?”

The student will be able to answer the question “what is a strike and why might a person choose to go on strike?”

The student will use interactive activities to explore varying perspectives on the Homestead Steel Strike of 1892.

The student will be able to explain a simple version of the way steel is made.

The student will demonstrate understanding of the differences and similarities between Pittsburgh at the height of the steel boom and today.

The student will demonstrate understanding of the differences and similarities between Pittsburgh at the height of the steel boom and today.

The students will analyze the song information presented for guidance in writing their own song lyrics.

Preparation Instructions

Songs used in this lesson:

“Raggedy”
“The Trouble Down at Homestead”
“Father Was Killed By the Pinkerton Men”
“Twenty-Inch Mill”
“Steel Mill Blues”
“Pittsburgh Town”
“Youngstown”
“Allentown”

Lesson Activities

Day 1 – Immigration to Pittsburgh

Objectives:

- The student will be able to answer the question “what is an immigrant and why might a person choose to immigrate to a new country?”
- The student will demonstrate knowledge of some basic information about the experience of a particular immigrant group by sharing a poster project.

Introductory Activity:

Ask students “what is an immigrant?” (Anticipated answer: Someone who comes from another country.) Follow up by asking “why do you think someone might chose to leave their country and come to a new place?” Tell students that in the 1800s and 1900s Pittsburgh was a popular destination for immigrants from first Western, then Eastern Europe. Ask students to speculate as to why that might be. If students do not arrive at this conclusion on their own, remind them of Pittsburgh’s manufacturing history. Finish the introduction by asking students to tell why new immigrants might come to a place with manufacturing jobs. (Guide students to think about the fact that many of the immigrants would not have known English or been well educated.)

Reading Activity:

The teacher will read aloud *The Keeping Quilt* by Patricia Polacco. The picture book shows and tells the story of four generations of a Russian immigrant family. As the students listen to the story, ask them to think about how the family's lifestyle changes from one generation to the next. (For example, at the beginning of the story, the little girl needs to translate from English to Russian for her parents. Is that still true later on in the story?)

Day 2– Unions/Homestead Steel Strike

Objectives:

- The student will be able to answer the question “what is a union and why might workers wish to be part of a union?”
- The student will be able to answer the question “what is a strike and why might a person choose to go on strike?”
- The student will use interactive activities to explore varying perspectives on the Homestead Steel Strike of 1892.

Introductory/Song Activity:

Using Pete Seeger's version of “Raggedy” students will think about some of the complaints workers had in the song. Ask students to listen to the song one time through without writing anything down. The second time ask students to make a list of things the workers don't have (nice clothes, enough food, homes, land of their own, cows, hogs.) We will then review the list. The teacher will then play the song a third time, asking students to pay attention to the end of the song. Students will be asked to think about how the song changes at the end (we're gonna get something for our labor....)

After the song, the vocabulary terms “union” and “collective bargaining” will be discussed. Students will be asked to think about who might think unions are a good idea. They will then be asked to think about who might not be keen on unions. As an introduction to the second part of the lesson, students will be asked to think about what might happen if the union and the business can't come to an agreement about an issue (for instance, health care for workers.) Ask students to hold on to their ideas.

History/Reading/Song Activity:

Ask students if anyone can tell me where Homestead is. Using a Pittsburgh map, show students where Wilkesburg is located and show them where Homestead is located.

Ask students if anyone knows of an important historical event that took place in Homestead. After giving students a chance to guess, direct students back to the earlier question of what happens when the union and company can't agree. Introduce the idea of a strike.

Play for students Ellen Stekert's “The Trouble Down at Homestead.” First time have students just listen. The second time use a graphic organizer (eg: story board,) ask students to write down what happened in this song, with the lyrics in front of them. Give students the direction that they do not need to worry about having exactly the same things written down as their neighbor. Once students have had some time with the graphic organizer, ask students to discuss with a neighbor what they heard. Pairs will then report back to the class.

Let students know that the Homestead Steel Strike was a real event that happened in Homestead. At this point in the lesson, give a bit more background of what happened.

1892 The Homestead Strike occurs.

A union contract at Homestead expires; on vacation in Europe, Carnegie directs Frick to handle the situation. The workers have been organizing a strike, and when they are locked out, the strike proceeds. Frick has prepared for a stand-off by hiring Pinkerton agents. The New York Times writes, "It is evident there is no 'bluffing' at Homestead. The fight there is to be to the death." The Pinkertons arrive and shoot it out with workers for about twelve hours. Although the Pinkertons surrender, they are forced to pass through a crowd of hundreds of workers, who beat them mercilessly, severely injuring twenty of them. The state militia is sent in to reclaim the mill and strikebreakers are hired to re-open it. This incident marks the end of Carnegie's image as a friend of the worker.

Once students have learned a bit about the strike, students will be given a slip of paper with one of the following roles printed on it:

Striking Steel Worker

Henry Clay Frick

Andrew Carnegie

Steel Worker's Wife

Pinkerton Detective

Reporter

The students will then listen to "The Trouble Down at Homestead" again and will be asked to think about how they would feel listening to this song if they were the person on their piece of paper. They will then be asked to explain why they would have their feelings. Students will share in pairs and then will report to the class what they thought. The class will then listen to "Father Was Killed By the Pinkerton Men" and will compare and contrast the two songs.

Day 3 – How Steel is Made

Objectives:

- The student will be able to explain a simple version of the way steel is made.
- The student will demonstrate understanding of the differences and similarities between Pittsburgh at the height of the steel boom and today.

Introductory Activity:

Students will be read *Steel Town* by Jonah Winter. *Steel Town* describes the process of making steel. Students will be asked first to pick out any places they are familiar with in the book (the book is set in Pittsburgh.) Students will pick places such as Hot Metal Bridge, Birmingham Bridge, and maybe Goat Hill. The students will then go bit by bit through the book picking out the steps to making steel. Students will be asked to trace the steps using the "step by step chart" graphic organizer.

Song Activities:

Using Vivien Richman's "Twenty-Inch Mill" the students will make a list of jobs in the mill. As a class, we'll then talk about the role of each of these workers. After we've made our list, we'll listen to the song again and discuss what sort of emotion Ms. Richman conveys in the song. (Pride: why would a Pittsburgh singer be so proud of the [at this time] men working in the mill?)

What do these jobs mean?

Rougher - Operates roughing mill roll stands to reduce steel billets, blooms, and slabs to specified dimensions, using knowledge of rolling practices and steel properties: Reads rolling order to determine setup specifications. Installs rolling equipment, such as roll stands, guides, bar turners,

and repeaters on rolling line, using handtools, bars, levers, and sledges. Moves controls to set specified draft between rolls at each stand. Observes color of heated steel to determine rolling temperature and starts roughing stands. Examines product passing through mill for surface defects, such as scratches and cracks. Verifies specified gauge of product after each pass, using calipers. Gives directions to mill crew in readjusting roll draft and realigning guides. May set up and monitor computerized roughing roll stands. May be designated according to type of mill operated as Rougher, Bar Mill; Rougher, Hot-Strip Mill; Rougher, Merchant Mill.

Catcher - Guides hot steel shapes, such as bars, rods, and sheets, from one set of rolls to another: Catches end of hot steel with tongs as it comes through first set of rolls and feeds end into next set of rolls. May set and adjust repeaters, guides, and rollers, using handtools.

Roller - Operates primary mill to roll hot steel ingots into blooms, slabs, billets, or beam blanks, following rolling orders and using knowledge of steel properties and rolling practices: Reads rolling order to determine setup, rolling sequences, number of passes required, and draft (space between rolls) for each pass. Sets clearances on guides and rolls, using wrenches and measuring instruments, and starts mill to roll sample ingot. Measures sample for conformance to dimensional specifications, using calipers, tape, and level. Moves levers to regulate draft, as shown by dial indicator, and to control movement of conveyors, water sprays, and mill tables for each pass. Signals soaking pit personnel for ingots as needed. Observes color of ingot to determine if specified rolling temperature has been attained. Gives directions to workers in duties, such as changing rolls, regulating speed of conveyors, and turning ingot, to obtain product of specified size, shape, and quality. May be designated according to type of mill operated as Roller, Billet Mill; Roller, Blooming Mill; Roller, Slabbing Mill.

Hookers - Wraps bundles - hooks to train to transport steel on a pulley system.

Straightener - Operates power press equipped with pressure blocks or dies to straighten warped or bent metal objects, such as plates, structural castings, shapes, forgings, and shafts to specified dimensions: Examines workpiece to locate defects, using such devices as straightedge, deflection gauge, template, and square. Positions and locks specified pressure blocks, or die, into ram of machine, or positions shims under high spots of workpiece. Lifts and positions workpiece into bed of machine manually or using jib or crane. Starts ram which presses out bent or high spots of workpiece. Reexamines and repositions workpiece, changing shims for each pass until workpiece conforms with specifications. May turn levers or handwheels to adjust depth and pressure of ram. May preheat metal, using heating furnace or hand torch and clean dies between pressings, using compressed air, oil, and brush. May tend machine equipped with preset dies to bend metal to specified shapes. May grind rough edges from finished workpiece, using portable hand grinder. May be designated according to part straightened as Barrel Straightener (ordnance) II; Crankshaft Straightener (auto. mfg.); Gear Straightener (auto. mfg.); or according to type press operated as Gag-Press Straightener (steel & rel.).

Helper - Assists HEATER (steel & rel.) in heating steel to specified rolling temperature in soaking-pit furnaces: Ignites furnace burners, using torch. Turns valves and dampers of furnace. Records meter readings of furnace. Performs other duties as described under HELPER (any industry) Master Title.

Heaters - Controls gas or oil fired soaking pit or reheating furnaces to heat sheets, blooms, billets, and slabs to specified rolling temperature: Ignites furnace burners with torch, and turns valves to regulate flow of fuel and air to burners. Signals CHARGER OPERATOR to charge steel into furnace.

Reads dials and gauges, observes color of steel in furnace, and adjusts controls to maintain specified temperature in furnace. May assist workers in repairing, replacing, or adjusting furnace equipment and burners, using hand tools.

Pilers – Puts vertical high beams in for construction.

Charger - Tends charging mechanism that moves steel shapes, such as blooms, billets, and slabs, in specified sequence, through soaking-pit furnace: Signals CHARGER-OPERATOR HELPER or OVERHEAD CRANE OPERATOR (any industry) to position steel on furnace skids. Moves levers on control panel to position skid on entry bed, open furnace door, and start pusher arm that pushes steel into furnace. Observes inside of furnace, projected on television screen, and moves controls to spot steel in specified locations. Moves controls to discharge steel onto mill rollers. Records quantity of steel charged and discharged. Assists other workers in cleaning furnace bottoms and repairing or replacing defective equipment, using handtools.

Bucky Man – Either pout the molten steel out of a bucket or pours ingredients in.

Using Blind Blake’s “Steel Mill Blues,” we will discuss the experience of African American steel workers. Students will be asked to compare this song with “Twenty-Inch Mill” using a Venn diagram.

Day 4 – Decline of Steel

Objectives:

- The student will demonstrate understanding of the differences and similarities between Pittsburgh at the height of the steel boom and today.
- The students will analyze the song information presented for guidance in writing their own song lyrics.

Introductory Activity:

1. Walk down to Penn Avenue in Wilkinsburg – make observations – what do you see?
2. Check out photos from the 1950s. What do you observe in these photos?
3. What has changed? Why do you think things have changed?

Song Activity:

First, the teacher will play “Pittsburgh Town” by Vivien Richman. Students will be asked to draw a picture of images they hear in the song. (Some things that might be included – hills, smoke, rivers, steel, J&L Steel – up and down river as far as you can see.) Students will then be asked to reflect on what things in their pictures are still true – hills, rivers etc.

The teacher will inform the students that this song was recorded in 1959. The students will then be asked again “What has changed? Why do you think things have changed?” Students will make the connection between the loss of steel and the loss of business and prosperity in many Western Pennsylvania locations.

Students will then listen to Bruce Springsteen’s “Youngstown” and Billy Joel’s “Allentown.” We will look up where these places are located on a Pennsylvania/Ohio map so students can get a sense of where the two cities are located in proximity to Pittsburgh. We will then listen to the two songs. With Springsteen’s song, students will use a timeline graphic organizer to trace the story line. With Billy Joel’s song, students will be asked to write down what emotions they think Billy Joel is trying

to share in his song (frustration, nostalgia, anger.) Students will then be asked to summarize in writing what they think the songs are about. Are they both about the same thing? If not, how are they different?

Extending the Lesson

For Day 1

Using Dorothy and Thomas Hoobler's Family Album series, ask students to research the experience of a variety of different immigrant groups in pairs or groups of three (Italian, Irish, German, Chinese, Japanese, Jewish, Scandinavian, Mexican included.) Students will create a poster showing important facts about the immigrant group's experience, which they will then share with the class. The posters will include the following topics: work, family, church, school, social clubs, and any prejudice (make sure students can define word "prejudice") the group might have faced and why.

For Day 2

Using *Sweat and Blood: A History of U.S. Labor Unions* (Gloria Skurzynski) and *Andrew Carnegie: Steel King and Friend to Libraries* (Zachary Kent) compare and contrast the way Andrew Carnegie is portrayed in the two books. Ask students to write a paragraph telling why they think Mr. Carnegie is portrayed in such different ways.

For Day 3

Students will be read *No Star Nights* by Anna Egan Smucker and watch a short clip of a former steel worker giving a tour of the closed Carrie Furnace facility. Students will then be asked to write a paragraph describing how Western Pennsylvania has changed since the time described in the book and video clip.

For Day 4

Write song lyrics for a song about Pittsburgh now. Think about Vivien Richman's song. Consider what sorts of visual images you would want to include. Think also about Bruce Springsteen and Billy Joel's songs. They are both quite sad in tone. Do you want your song to be sad, or do you think of Pittsburgh as a pretty happy place now?

Resources

Lyrics

"Raggedy"

Raggedy, raggedy are we
Just as raggedy as raggedy can be
We don't get nothin' for our labor
So raggedy, raggedy are we

(Hungry!)

Hungry, hungry are we
Just as hungry as hungry can be
We don't get nothin' for our labor
So hungry, hungry are we

(Homeless!)

Homeless, homeless are we
Just as homeless as homeless can be
We don't get nothin' for our labor
So homeless, homeless are we

(Landless!)

Landless, landless are we
Just as landless as landless can be
We don't get nothin' for our labor
So landless, landless are we

(Cowless!)

Cowless, cowless are we
Just as cowless as cowless can be
We don't get nothin' for our labor
So cowless, cowless are we
So hogless, hogless are we
Hogless, hogless are we
We don't get nothin' for our labor
So hogless, hogless are we

(Union!)

Union, union are we
Just as union as union can be
We don't get nothin' for our labor
So union, union are we

(We're gonna get somethin'!)

Union, union are we
Just as union as union can be
We're gonna get somethin' from our labor
So union, union are we

“The Trouble Down at Homestead”

Our trouble down at Homestead,
it came about this way,
The grasping corporation
had the audacity to say:
"If you'll renounce your union
and forswear your liberty,
~e'll give you all a chance

to live and die in slavery."

CHORUS:

Then a man that fights for honor, none can blame him,
May look at him wherever he may roam,
And no son of his can ever live to shame him
While liberty and hooor rules the home.

See that band of sturdy workingmen
start at the break of day
With determination in their face
that's surely meant to say:
"No man can drive us from our homes
for which we've toiled so long,
No man can take our places.
for here's where we belong."

A woman with a rifle
and her husband in the crown,
She handed hi:l the weapon,
they cheered her long and loud;
He kissed her, then said:
"r.!ary, go home till we are through."
She answered: "NO, if you must die,
my place is here with you."

See that band of tramp detectives
come without authority,
Like thieves at night while decent men
are sleeping peacefully;
Would you wonder that our decent men
with indignation burn,
The lowly worm that crawls the earth
when tred upon ~ill turn.

"Father Was Killed By the Pinkerton Men"

'Twas in a Pennsylvania town not very long ago
Men struck against reduction of their pay
Their millionaire employer with philanthropic show
Had closed the works till starved they would obey
They fought for home and right to live where they had toiled so long
But ere the sun had set some were laid low.
There're hearts now sadly grieving by that sad and bitter wrong
God help them for it was a cruel blow.

Chorus:

God help them tonight in their hour of affliction
Praying for him whom they'll ne'er see again

Hear the poor orphans tell their sad story
"Father was killed by the Pinkerton men."

Ye prating politicians, who boast protection creed,
Go to Homestead and stop the orphans' cry.
Protection for the rich man ye pander to his greed,
His workmen they are cattle and may die.
The freedom of the city in Scotland far away
'Tis presented to the millionaire suave,
But here in Free America with protection in full sway
His workmen get the freedom of the grave.

"Twenty-Inch Mill"

Come all you iron workers and listen to my song!
It's all about the twenty-inch, I won't detain you long,
Our troubles they are numerous, we have a noble crew;
All things go right when we're by night, we make a gallant show.

We have roughers built like elephants
And others thin and spare,
Our catcher says it's all the same,
Our roller's seldom there.
We have hookers, they're all skillful men,
Our straighteners number five,
And when we go to changing rolls,
All nature seems alive.

We have helpers; we have heaters
That sometimes burn the steel;
We have pilers too, and chargers
That help to ram the peel.
Our buggy man's a daisy;
He's a man that takes no sass,
But he always helps big Jumbo there
To drive them in the pass.

When we are on the night turn,
They come well-filled with beer,
It takes a big supply, you know,
To put them in good cheer.
They try like men to work again;
You may look on with pride;
The bar at last goes through the pass,
But sticks fast in the guide.

Now we can't do much on iron rails,
On slap-jacks or on tees;
We're no great hands on channel bars,

On posting rounds or zees;
But we're expert hands on six-by-six,
Your orders we can fill,
And, you for your life, don't let them go
To any other mill.

Come all you iron workers,
And listen to my song;
It's all about the twenty-inch,
I won't detain you long.
Our troubles they are numerous,
We have a noble crew;
All things go right when we're by night,
We make a gallant show!

"Steel Mill Blues"

Workin' in the steel mill, making pig iron all day.
Workin' in the steel mill, making pig iron all day.
When I come home, mama, have somewhere for me to lay.

Get my dinner ready, don't let my coffee be cold.
Have my dinner ready, don't let my coffee be cold.
Don't forget, mama, please save my sweet jelly roll.

When I look into that blast furnace, it's all red hot with ore.
When I look into that blast furnace, it's all red hot with ore.
If I catch you stealin', ain't goin' back no more.

Every pay day, mama, when I get my check.
Every pay day, mama, when I get my check.
After I pay your bills, I'm a nervous wreck.

Pig iron in mill, eaten out all my shoes.
Pig iron in mill's eaten out all of my shoes.
That's the reason why I got those lowdown steel mill blues.

"Pittsburgh Town"

Pittsburgh town is a smoky ol' town, Pittsburgh
Pittsburgh town is a smoky ol' town, Pittsburgh
Pittsburgh town is a smoky ol' town
Solid iron from McKeesport down
Pittsburgh, Lord God, Pittsburgh

Well what did Jones and Laughlan steal? Pittsburgh
What did Jones and Laughlan steal? Pittsburgh
What did Jones and Laughlan steal?

Up an' down the river jus' as far as you can see
In Pittsburgh, Lord God, Pittsburgh

All I do is cough and choke in Pittsburgh
All I do is cough and choke in Pittsburgh
All I do is cough and choke
From the iron filings and the sulphur smoke
In Pittsburgh, Lord God, Pittsburgh

From the Allegheny to the Ohio, in Pittsburgh
Allegheny to the Ohio
Allegheny to the Ohio
They're joining up in the C.I.O.
Pittsburgh, Lord God, Pittsburgh

"Youngstown"

Here in northeast Ohio
Back in eighteen-o-three
James and Dan Heaton
Found the ore that was linin' Yellow Creek
They built a blast furnace
Here along the shore
And they made the cannonballs
That helped the Union win the war

Here in Youngstown
Here in Youngstown
My sweet Jenny I'm sinkin' down
Here darlin' in Youngstown

Well my daddy worked the furnaces
Kept 'em hotter than hell
I come home from 'Nam worked my way to scarfer
A job that'd suit the devil as well
Taconite coke and limestone
Fed my children and make my pay
Them smokestacks reachin' like the arms of God
Into a beautiful sky of soot and clay

Here in Youngstown
Here in Youngstown
Sweet Jenny I'm sinkin' down
Here darlin' in Youngstown

Well my daddy come on the Ohio works
When he come home from World War Two
Now the yard's just scrap and rubble
He said "Them big boys did what Hitler couldn't do."

These mills they built the tanks and bombs
That won this country's wars
We sent our sons to Korea and Vietnam
Now we're wondering what they were dyin' for

Here in Youngstown
Here in Youngstown
My sweet Jenny I'm sinkin' down
Here darlin' in Youngstown

From the Monongahela valley
To the Mesabi iron range
To the coal mines of Appalachia
The story's always the same
Seven hundred tons of metal a day
Now sir you tell me the world's changed
Once I made you rich enough
Rich enough to forget my name

In Youngstown
In Youngstown
My sweet Jenny I'm sinkin' down
Here darlin' in Youngstown

When I die I don't want no part of heaven
I would not do heaven's work well
I pray the devil comes and takes me
To stand in the fiery furnaces of hell

"Allentown"

Well we are living here in Allentown
And they're closing all the factories down
Out in Bethlehem they're killing time
Filling out forms, standing in line
Well our fathers fought the Second World War
Spent their weekends on the Jersey Shore
Met our mothers at the USO
Asked them to dance, danced with them slow
And we're living here in Allentown

But the restlessness was handed down
And it's getting very hard to stay

And we're waiting here in Allentown
For the Pennsylvania we never found
For the promises our teachers gave
If we worked hard, if we behaved
So the graduations hang on the wall

But they never really helped us at all
No they never taught us what was real
Iron and coal, chromium steel
And we're waiting here in Allentown

But they've taken all the coal from the ground
And the union people crawled away

Every child had a pretty good shot
To get at least as far as their old man got
Something happened on the way to that place
They threw an American flag in our face

Well, I'm living here in Allentown
And it's hard to keep a good man down
But I won't be getting up today

And it's getting very hard to stay
And we're living here in Allentown

Books

The Italian American Family Album (Dorothy and Thomas Hoobler) – Italian, Irish, German, Chinese, Japanese, Jewish, Scandinavian, Mexican)

The Keeping Quilt (Patricia Polacco)

Sweat and Blood: A History of U.S. Labor Unions (Gloria Skurzynski)

Andrew Carnegie: Steel King and Friend to Libraries (Zachary Kent)

No Star Nights (Anna Egan Smucker)

Steel Town (Jonah Winter)