The Blacksmith in Society

Lesson Plan # 3 - The Cost of Wages

Teacher Background

When using numerical values alone, the wages earned by modern workers seem astronomical in comparison with those of workers of earlier times. However, upon closer inspection, one usually finds that the numerical values are relative, that wages have remained fairly constant as compared to the overall cost of living. Financial figures used in this lesson are intended to promote the value of training and education by showing that, no matter what the era or dollar figure, skilled laborers earn more than unskilled workers.

Goal

After comparing selected actual wage and material costs from 1850, the 1930's and the present day, students will conclude that wages are relative to the overall cost of living and that skilled workers earn more than unskilled labor.

Objectives

- To show that a dollar figure does not represent the true value of wages, especially when comparing wages from different eras.
- To reinforce the importance of education or technical training to maximize individual earning capabilities.
- To enhance math skills as students compare wages of several eras, manipulate figures into corresponding (hours, days, etc.) and show relativity to the material costs of the appropriate era.

This activity addresses the following Maryland Learning Objectives

For grades 4 and 5
#1 Social Studies Skills
Students will demonstrate an understanding of historical and current events using chronological and spatial thinking, develop historical interpretations, and frame questions that include collecting and evaluating information from primary and secondary sources.

- Apply and organize information specific to social studies disciplines by reading, asking questions, and observing. (MLO 1.2)
- Interpret and organize primary and secondary sources of information including pictures, graphics, maps, atlases, artifacts, timelines, political cartoons, videotapes, journals, and government documents. (MLO 1.3)

For grades 6-8
#1 Social Studies Skills
Students will demonstrate an understanding of historical and current events using chronological and spatial thinking, develop historical

interpretations, and frame questions that include collecting and evaluating information from primary and secondary sources.

- Evaluate and organize information specific to social studies disciplines by reading, asking questions, investigating, or observing. (MLO 1.2)
- Interpret, evaluate, and organize primary and secondary sources of information including pictures, graphics, maps, atlases, artifacts, timelines, political cartoons, videotapes, journals, and government documents. (MLO 1.3)

#4 Economics

Students will develop economic reasoning to understand the historical development and current status of economic principles, institutions, and processes needed to be effective citizens, consumers, and workers participating in local communities, the nation, and the world.

- Analyze opportunity costs and trade-offs in business, government, and personal decision-making. (MLO 4.2)
- Analyze the relationship between the availability of natural, capital, and human resources, and the production of goods and services now and in the past. (MLO 4.3)

Suggested Background Reading

"The Costs of Labor" by Bob Heath, an article outlining the traditional apprentice program for blacksmiths and the relative value of products, found online at www.anvilmag.com/smith/costofla.htm

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Materials Needed

1. Financial Declarations of 1850 Blacksmiths in Frederick County, MD (provided)
2. Infirmary hardware price list (provided)
3. Additional Information for Lesson 3, a narrative describing the location and function of the Misty Mount Infirmary.
4. Job Application and Completion Record from Catoctin RDA (provided)
5. Current data showing wages paid to workers in your area. (Figures taken from USA JOBS, found online at www.usajobs.com, provide a good representation.)
6. Current cost of a keg of nails obtainable from a local hardware store.

Activity

1. Summarize the "Cost of Labor" article for students, emphasizing that blacksmiths learned the trade through a lengthy apprenticeship program and the number of hours worked on a typical day. Information taken from this article can be used to show how shipping, distribution and the number of holders that goods pass through affect the final price of the product.

2. Distribute the "Financial Declarations" table to students. Using the information provided, have children figure the hourly wage of employees, and the shop owner. To do this successfully, students will take the average number of hours worked on a typical day, multiply by the number of days worked in the month and divide this figure into the monthly wage. It is generally assumed that American craftsmen worked 12 hours per day, 6 days per week. It will be necessary to figure the number of hours worked per year to determine the wage of the shop owner. It is likely that the owner worked at least as many hours as the employees.

3. After determining the average hourly wage for employees and shop owners, compare this to the price of nails as presented in the excerpt from John Benson's ledger. Have students compute how many pounds of nails can be purchased for each hour of work.

4. Distribute the "Job Application and Completion Record" and "Infirmary Hardware" sheets to the students. By using the number of hours worked for skilled, intermediate and unskilled workers, have students determine the hourly wage for each. Using the guideline that a keg contains 100 pounds of nails have them determine how many pounds of nails could be purchased for each hour of work in the 3 labor categories.

5. A hasty evaluation of the results of steps 3 and 4 is misleading. An unskilled worker in the 1930's could purchase more nails with an hour's wage than the skilled blacksmith of 1850. Lead students in a brainstorming session, asking what general changes could have changed the relative value of labor to the cost of nails. After discussion, explain how the value of certain items was deflated by the advent of mass production techniques and improved transportation.

6. Using current data, have students compute how many nails a skilled and unskilled worker could purchase with today's hourly wage. Since transportation and production are similar to the 1930's the number will be somewhat similar to the 1930's. This may be an opportune time to introduce the subject of net and gross wages to older students. Using net income for the modern worker will give a more accurate comparison. The net income was very similar to the gross for 1930's workers.

7. After figures are compared, ask students to deduce whether the relative value of wages has risen, fallen or remained fairly constant for skilled workers over the last 150 years. Conclude the classroom session with a brainstorming session/discussion of economic factors other than the price of nails that may more accurately reflect the relative value of wages.

Follow-up Activity

1. Using the list of economic factors generated in Step 7 above, assign a specific item to each student/group for research. Ask students to determine the average cost of the item in 1850, 1930 and today using the Internet and traditional references. (Cost of a loaf of bread, a pair of shoes or housing are potential topics.) After determining the price, have students recalculate the relative value of wages.

2. After determining the relative value of wages, have students write a short essay explaining factors that may have skewed the comparison, i.e., introduction of foreign labor, taxes, variety of models.

3. Have students develop a computer spreadsheet using the Blacksmith's Daily Ledger provided. The students will recalculate the ledger for 1930 and today by multiplying the 1842 figures by the factors determined in #1, making comparisons in adjacent columns. Additional years can be added to make the project more challenging. A close examination of the depression era will show students that the cost of living can drop dramatically when many people are unemployed and wages tumble for those who are still working.

Additional Information
Lesson Plan 3
The Misty Mount Infirmary

Camp Misty Mount was built in 1936 by Works Progress Administration (WPA), the first of 3 organized group camps that were completed in the Catoctin Recreational Demonstration Area. Cabins, made of chestnut lumber salvaged from the local area, were clustered in 3 units. The Dining Hall and Infirmary were built in the center of the camp. The camp was intended for summer use. Cabins contained only beds and a single light fixture.

The Infirmary, located directly behind the Dining Hall, has multiple bedrooms, running water and is heated. Medical facilities, like the infirmary, were particularly important in the 1930's when polio, tuberculosis and other communicable diseases afflicted large groups of the population. This building had 6 patient beds, a private room and bath for the nurse, a small kitchen and a waiting room. A substantial amount of hardware was required for this building because of its size and complexity. The Map of Camp Misty Mount included in Lesson Plan #5 shows the exact location and relative size of the infirmary.

Financial Declarations
Of Selected Blacksmiths in
Frederick County, MD,
1850

Name of Blacksmith	Value of Capital	Value of Iron and Coal Used	Number of Fires	Number of Employees	Monthly Wage of Employees	Annual Net Income of Proprietor
C. Himes	$150	$250	1	1	$20	$650
Philip Hartman	$200	$500	2	2	$26	$1000
Mentzer and (Wm) Webb	$300	$600	2	3	$50	$1500
Dieter Zeck	$350	$400	2	1	$18	$700

Information taken from the Creagerstown and Emmitsburg districts of the 1850 Census

Entries from the records of John Benson, Clerk, Hopewell Furnace, 1833

Miscellaneous

Saltpetre	.20 pound	1 lb.	.20
Knives	.20, .40 each	2	.60
Nails	.09 pound	2 lb.	.18
Shoe Polish	.10 box	2	.20
Storegoods to Charity	…	…	.34 ½
		Total	$1.52½

Taken from *Hopewell Village* by Joseph E. Walker

INFIRMARY

HARDWARE

✓ 9	10 Kegs assorted nails	@ 3.50	35.00
✓	20 prs. hinges 2½" x 2½" brass finish butts	@ .20	4.00
✓	5 prs. hinges 18" strap and pin	@ 1.00	5.00
✓	7 prs. hinges 12" strap and pin	@ .50	3.50
✓	170 sq. ft. wire cloth, 16 mesh copper screen	@ .075	12.75
✓	52 sq. ft. rib lath, 3/8" ribs 4 3/4" o.c. "Diamond Rib Lath" or equal. 3.0 lbs. per sq. yd.	@ .03½	~~1.78~~ 1.72
✓	1 pr. spring hinges for toilet stall door		1.00
✓	2 heavy outside door lock sets for doors opening out	@ 5.00	10.00
✓	1 light outside door lock set for door opening out		2.00
✓	9 rim lock sets for interior doors	@ .50	4.50
✓	12 cupboard turns	@ .15	1.80
✓	8 cupboard "Elbow Catches"	@ .15	1.20
			~~$82.53~~
✓	6 sq. ft. hardware cloth ¼" mesh galv. 24" x 36"	@ .05	82.57 .30
✓	40 lbs. ½" diam. plain round steel rods.	@ .05	2.00
✓	192 lag screws ⅜" x 4"	@ .015	2.88
✓	6 gross 2" x 12 wood screws	@ .40	2.40
✓	10 gross 1½" x 9 wood screws	@ .30	3.00

Form No. 10-352

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
EMERGENCY ACTIVITIES
JOB APPLICATION AND COMPLETION RECORD

Symbol No. MD-4

Region I State Maryland Area Catoctin

Name of Job Garage Form 7 No. 112 Job No. 44

Location of Job Organized Group Camp 1-C Master Plan No. 9014-1-1 Working Plan No. 9024-1-1

BLOCK A - PROPOSED WORK

No. of Periods Required to Complete Job (1/4)	Work Contemplated			Estimated Costs			
	Unit	No. Units	~~M-Days~~ M-Hrs.	Labor	Materials	Equipment	Total
Previously approved							
Original or additional Request	Each	1	1012	325.00	139.45	-	464.45
TOTAL	XXXX	1	1012	325.00	139.45	-	464.45

BLOCK B - LABOR SUMMARY

Type of Labor	Unskilled	Intermediate	Skilled	Prof. & Tech.	Total
No. of Man-Hours	400	500	112	-	1012
Cost of Labor	104.00	165.00	56.00	-	$325.00

Submitted by G.B. Williams Title Project Manager Date April 14, 1937

BLOCK C - CLEARANCE

Park Authority	Date	Procurement Officer	Date	Inspector	Date
Karl E. Pfeffer	4/16/37	William S. Bahlman	4/21/37	D. M. Woodward Jr.	APR 16 1937

BLOCK D - COMPLETION RECORD

Work accomplished				Total encumbrances Completed Job				
Date of Completion	Unit	Number Units	M-Days M-Hours	Labor	Materials	Equipment	Total	Balance

Approved by _____ Title _____ Date _____ Release Date _____

(Justification on back of sheet)

Blacksmith's Daily Ledger
For B. Smith, June, 1842
(A fictitious compilation of entries from authentic ledgers from the era.)

1	to repair wagon	.13
	to mend harrow teeth	.33
	to repair caps pins	.07
2	to making plaits	.05
	to make and cut 15 bolts	.39
	to shoe a horse	.20
3	to 4 blind hooks	.14
	to mend a hoe	.19
	to toed sharp 4 shoes	.60
4	to mend a fork	.09
	to make and cut 9 bolts	.23
	to repair wagon	.33
5	to shoe a horse	.50
	to shoe a horse	.60
	to 3 rings and hooks and mend chain	.45
6	to 6 clasps and staples	.60
7	to make and cut 30 bolts	.83
8	to shoe a horse and mend chain	1.10
9	to strap on wagon	.19
	to shoe one old ox and mend staple	.26
10	to cut and head 60 bolts	1.60
11	to sharpen plough irons	.30
	to mending a pitch fork	.07
	to shoe a horse	.40
12	to mend cutter shoe	.16
	to mend chains	.12
	to 10 hooks and staples	.66
13	to use of plow	.73
	to toe and sett one show	.15
14	to 2 hooks for chain	.18
	to 1 new link and to mend chain	.19
	to toe and sharp 4 shoes	.58
15	to sharp and sett 3 shoes	.34
	to repair centre pin and 6 rivets and hoop	.47
	to mend tongs	.15
	to mend wagon	.42