



Who Works for Minimum Wage?

Lesson Author

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Lesson Description

The minimum wage is a topic that has sparked heated debate across the country. Before taking an opinion on whether it should be raised and what the consequences may be, it is important to know the facts. Who really works for the minimum wage? Where are you most likely to be paid minimum wage, and in what kind of job? What are the characteristics of workers who are paid the minimum wage, and what decisions could students make to improve their chances of earning a higher wage than the minimum? This lesson answers these questions through an interactive four corners activity where students try to guess who is most likely to earn the minimum wage. Students debrief the exercise by examining data from the U.S. Bureau of Labor Statistics' Characteristics of Minimum Wage Workers report to discover how many Americans work for the minimum wage currently and how many have in the past, what the characteristics of those workers are (by gender, hours, education, age, and industry), and the geographical distribution of minimum wage workers. Students will then construct graphs charting minimum wage statistics nationally (and for their own state, if it is higher than the national minimum) and by educational level using the Federal Reserve Economic Data (FRED) graphing tool.

Students will next evaluate primary source data to translate historical minimum wage rates into current numbers using a CPI calculator. Students will define price floors and apply that knowledge to the minimum wage debate through the use of graphs and data highlighting regional price differences. As an assessment, students will synthesize their knowledge of who works for the minimum wage and why in a written assignment where they give advice to a fellow student in a fictional discussion board post.

Grade Level

9–12

Concepts

Equilibrium	Minimum wage
Human capital	Price floors
Inflation	Supply and demand
Labor market	Surplus

Objectives

Students will be able to:

- Identify the characteristics of workers most likely to work for the minimum wage.
- Interpret minimum wage data through graphs and charts.
- Construct graphs with minimum wage data using the Federal Reserve Economic Data (FRED) online graphing tool.
- Analyze the effects of inflation on the purchasing power of the minimum wage.
- Define price floors and apply that knowledge to the minimum wage debate.
- Compare the cost of living across various geographical regions as it relates to the minimum wage.
- Recognize the role that education plays in determining wages.



Time required

75 minutes

Materials

Handout 1: "Who Works for Minimum Wage?"

Handout 2: "Graphing and Calculating the Minimum Wage"

Handout 3: "Assessment"

Visual 1: "Classroom Corners Signs"

Visual 2: "Graphs for Four Corners Activity"

Internet access (for displaying charts from "A Story in Charts: Who Works for Minimum Wage" and "Southern States Avoid Minimum Wage-Raising Bandwagon" articles, or you may provide copies of the articles to students)

Student Internet access for Federal Reserve Economic Data (FRED) graphing activity

Projector to display charts from "A Story in Charts: Who Works for Minimum Wage?" (<https://bit.ly/who-works-for-minimum-wage>) and "Southern States Avoid Minimum Wage-Raising Bandwagon" (<https://bit.ly/minimum-wage-raising-bandwagon>) articles and Visual 2: "Graphs for Four Corners Activity."

Preparation

Read the lesson description. Prior to conducting the lesson, read the articles "[A Story in Charts: Who Works for Minimum Wage?](#)" and "[Southern States Avoid Minimum Wage-Raising Bandwagon.](#)" Copy Handout 1: "Who Works for Minimum Wage?" Handout 2: "Graphing and Calculating the Minimum Wage," and Handout 3: "Assessment" for each student. Make one copy each of Visual 1: "Classroom Corners Signs" and post each number in one of the four corners of the room. If you are using an overhead projector for Visual 2: "Graphs for Four Corners Activity" rather than displaying online from the lesson, make a copy for use on the overhead projector.

Procedures

1. Post Visual 1: "Classroom Corners Signs" in each of the four corners in the classroom prior to beginning the lesson.
2. To begin the lesson, ask students if they know the level of the current federal minimum wage. (The federal minimum wage as of April 2020 is \$7.25; since teenagers are one of the groups most likely to work for minimum wage, they are likely to know the answer. If your state or city has a higher minimum wage than the federal level, ask students if they can identify that wage as well.)
3. Tell students they are going to participate in an activity to identify who works for the minimum wage. Students will receive points for each correct answer. Distribute Handout 1: "Who Works for Minimum Wage?" and tell students you will read a characteristic of workers, and they are to move to the corner that best describes which worker is most likely to work for the minimum wage. (Information for this activity was gathered from the U.S. Bureau of Labor Statistics' Characteristics of Minimum Wage report; to see detailed statistics, access <https://bit.ly/minimum-wage-workers-2018>.)
4. Note: In this activity, you will be moving quickly through the questions without detailed discussion; most statistics and explanations will be provided in the debriefing, when students interact with charts and data.
5. Tell students they are going to practice the activity first before marking anything on their sheets. Tell them to move to corner 1 if they or someone they know currently works for the minimum wage or has worked

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for minimum wage in the past (students may not want to identify themselves as minimum wage workers, especially if other students in the classroom earn higher wages) and to corner 2 if they do not know anyone who works or has ever worked for the minimum wage. (If your state has a higher than federal minimum wage, let students know that you will be using the federal minimum wage for this activity.) Emphasize to students that they will need to listen carefully to know which corner to move to, as the characteristics will change with each round. For each correct answer, they will earn 10 points (corner directions are also marked on their handout).

6. Tell students you will now begin the exercise with question 1. Ask question 1: “Who is more likely to work for minimum wage, full-time or part-time workers? For full-time, go to corner 1, for part-time, corner 2.” Allow students to move to their corners, then reveal that part-time workers are more likely to work for the minimum wage. Allow students time to mark their handouts with their scores.
7. Ask question 2: “Who is more likely to work for minimum wage, men or women? For women, go to corner 1, for men, corner 2.” Allow students to move to their corners, then reveal that women are more likely to work for the minimum wage. Allow students time to mark their handouts with their scores.
8. Ask question 3: “Who is more likely to work for minimum wage, a high school graduate, a person with some college, someone with an associate’s degree or occupational training, or someone with a bachelor’s degree? For high school graduate, go to corner 1, for some college, corner 2, for associate’s degree or occupational training, corner 3, for bachelor’s degree, corner 4.” Allow students to move to their corners, then reveal that of these groups, high school graduates are the educational group most likely to work for the minimum wage. Allow students time to mark their handouts with their scores.
9. Ask question 4: “In what industry is someone most likely to work for minimum wage: wholesale and retail trade, education and health services, leisure and hospitality, or professional and business services? For wholesale and retail trade, go to corner 1, for education and health services, corner 2, for leisure and hospitality, corner 3, for professional and business services, corner 4.” Allow students to move to their corners, then reveal that leisure and hospitality is the occupational group most likely to work for the minimum wage. For more information on each of these industries, see the Bureau of Labor Statistics’ “[Industries at a Glance](https://www.bls.gov/iag/).” (<https://www.bls.gov/iag/>). Allow students time to mark their handouts with their scores.
10. Ask question 5: “In what region of the country is someone most likely to work for minimum wage: Northeast, Midwest, West, or South? For Northeast, go to corner 1, for Midwest, corner 2, for West, corner 3, and for South, corner 4.” Allow students to move to their corners, then reveal that workers in the South are most likely to work for the minimum wage. Allow students time to mark their handouts with their scores.
11. Ask question 6: “What age group is most likely to work for minimum wage: 16- to 19-year-olds, 20- to 24-year-olds, 25- to 29-year-olds, or 30- to 34-year-olds?” For 16- to 19-year-olds, go to corner 1, for 20- to 24-year-olds, corner 2, for 25- to 29-year-olds, corner 3, for 30- to 34-year-olds, corner 4.” Allow students to move to their corners, then reveal that the age group most likely to work for the minimum wage is 16- to 19-year-olds. Allow students time to mark their handouts with their scores.
12. Ask question 7: “Which group is most likely to work for minimum wage: people who have never been married or people who are married? For married, go to corner 1, for never married, corner 2.” Allow students to move to their corners, then reveal that people who have never been married are more likely to work for the minimum wage than married people. (Young people are more likely to have never been married.) Allow students time to mark their handouts with their scores.



13. Ask question 8: “Which group is most likely to work for minimum wage: people who work in the public or the private sector? For private sector, go to corner 1, for public sector (government), corner 2.” Allow students to move to their corners, then reveal that people who work in the private sector are more likely to work for the minimum wage than those who work in the public sector (federal, state, and local governments). Allow students time to mark their handouts with their scores.
14. Ask question 9: “In which of the following years would workers be most likely to be working for minimum wage: 1980, 1990, 2000, or 2010? For 1980, go to corner 1, for 1990, corner 2, for 2000, corner 3, for 2010, corner 4.” Allow students to move to their corners, then reveal the answer is 1980. Allow students time to mark their handouts with their scores.
15. Ask question 10: “Which of the following states has the highest percentage of the labor force working for minimum wage: Alabama, Virginia, Rhode Island, or Texas? For Alabama, go to corner 1, for Virginia, corner 2, for Rhode Island, corner 3, and for Texas, corner 4.” Allow students to move to their corners, then reveal that people who work in Alabama are the most likely to work for the minimum wage. (In 2018, 1.5 percent of Alabamians worked for the minimum wage. One percent of Texans worked for minimum wage, while less than one percent of Virginians and Rhode Islanders worked for the minimum wage.) Allow students time to mark their handouts with their scores.
16. Allow students time to return to their seats and tally their scores and if desired, award a small prize to the student(s) with the highest score(s).
17. Display the article “[A Story in Charts: Who Works for Minimum Wage?](https://bit.ly/who-works-for-minimum-wage)” (<https://bit.ly/who-works-for-minimum-wage>) or distribute copies to each student or pair of students. Debrief the four corners exercise by going over the charts in the article:
 - a. **2015 U.S. wage and salary workers:** Point out that 58.5 percent of workers in the United States were paid hourly in 2015, and that of these, 3.3 percent or 2.6 million workers made at or below minimum wage (Update: In 2018, 2.1% or 1.7 million hourly workers were paid at or below minimum wage; the percent of workers paid hourly was unchanged from 2015).
 - b. Ask the students, who works below minimum wage? *Under the Fair Labor Standards Act, tipped employees, such as waiters, waitresses, bellhops, counter employees who serve customers, bussers, and service bartenders may be paid a minimum of \$2.13 an hour.*
 - c. **Share of hourly U.S. workers at or below minimum wage:** Point out that as in question 9, in 1980 and 1981, 15.1 percent of hourly workers worked for the minimum wage. Ask students to identify which years the share of workers who were paid the minimum wage seemed especially low? *The answer is 2001 to 2008. Between January 2001 and January 2008, the percentage of hourly workers paid at or below the minimum wage never rose above 3 percent; in January 2006, it fell to 2.2 percent, the lowest rate since 1979, when the data were first recorded. In January 2016, the number stood at 2.7 percent. GDP growth averaged 2.4 percent over this time period, but was especially strong in the fourth quarter of 2003 and the first and second quarters in 2004, when it averaged 4.3 percent. In a strong economy, employers may have to raise wage offers to attract and keep workers (Update: Since 2016, the percentage of workers earning minimum wage has been below 2%; many states have since passed laws raising their state minimum wages above the Federal minimum and a strong economy also lowers the number of workers being paid the minimum).*



- d. **By gender:** This graph explains question 2, which shows that women are significantly more likely to work for minimum wage than men. Ask students for possible explanations. *Answers will vary, but one factor is that women more often work part-time, and part-time jobs are more likely to pay minimum wage. In 2018, 24 percent of employed women worked part-time, compared to 12% of men. Women are also more likely to work in service sector jobs such as waitresses (71.3 percent), counter attendants (59.2 percent), or bartenders (53.1 percent), all jobs not required to pay the minimum wage. Education is not a factor, however; in 2017, women earned 57 percent of all bachelor's degrees, 59 percent of all master's degrees, and 53 percent of all doctoral degrees.*
 - e. **By hours:** Part-time workers are more likely to work for minimum wage than full-time workers. What kinds of jobs are part-time? *Jobs in leisure and hospitality are the most likely to be part-time, with average hours worked 34.3 hours (2019), the lowest of any industry except for those who work in private households (domestic help such as cooks, maids, and gardeners). Fast-food and retail jobs, many of which teenagers work, are usually part-time jobs.*
 - f. **By education:** High school graduates are the most likely to work for minimum wage of any educational group. *Students may wonder why the percentage of high school graduates working for minimum wage exceeds that of high school dropouts; many high school dropouts are not in the labor force, so they would make up a smaller percentage of the total number of minimum wage workers. Increasing your human capital with additional education increases your earning power.*
 - g. **By age:** Teenagers and young people are the most likely to be working for minimum wage—these are often entry-level jobs that teens and young adults work part-time after school. Young people are also more likely to have not yet married, which is why unmarried people are also more likely to earn the minimum wage.
 - h. **By industry:** Leisure and hospitality, which includes restaurants, hotels, sporting venues, and the arts, is the sector most likely to pay the minimum wage. By contrast, miners, information workers, and those working in the financial sector and the construction industry are the industries least likely to pay the minimum wage. Ask students why they think these industries pay higher wages. *Answers will vary, but mining and construction can be dangerous jobs that involve working outdoors and therefore pay a wage premium; these jobs may also require technical skills. Information workers and those in the financial services industry likely have advanced technical skills and/or college degrees, and therefore would command a higher wage.*
 - i. **Share of minimum wage workers:** Minimum wage workers are concentrated in the South—many states in the West and Northeast have higher state minimum wages. Show students the “states with minimum wage higher than federal minimum wage” chart and ask what state in the South has a state minimum above the federal level. The answer is Florida. Show students the “Regional Price Differences” chart from the “[Southern States Avoid Minimum Wage-Raising Bandwagon](https://bit.ly/southern-states-avoid-minimum-wage-raising-bandwagon)” (<https://bit.ly/minimum-wage-raising-bandwagon>) article and ask why some states may pay a higher than federal minimum wage. *Many states have a higher cost of living than the South—Florida has the highest cost of living among southern states.*
18. Explain to students that the minimum wage is what is known as a price floor, or a minimum legal price. In the labor market, the minimum wage sets the minimum legal price (or wage) that workers can be paid per hour. The federal minimum wage is established by and regulated under the [Fair Labor Standards Act of 1938](https://bit.ly/fair-labor-standards-act) (the FLSA) (<https://bit.ly/fair-labor-standards-act>); amendments or changes to the FLSA (including increases in the minimum wage) are made by Congress.



19. Show students Visual 2: “Graphs for Four Corners Activity,” and discuss each graph.

Graph A shows the market for labor in equilibrium. Ask students to point out the equilibrium or market clearing price (wage) and the market clearing quantity (number of workers). *The answers are \$9 and 500, respectively.*

Graph B shows a price floor that is below equilibrium, or nonbinding. Ask students what the market equilibrium price is. *The answer is \$9 an hour.* Ask students to identify the level of the price floor (minimum wage). *The answer is \$7.25.* Since \$7.25 is the minimum legal price (or wage, in this case), and the market is clearing at \$9, ask student if this is a binding price floor, which affects the market. *This price floor is nonbinding and does not affect the market.* Note that wages are already being paid and the market is already clearing above the minimum required by law.

Graph C shows a price floor that is binding. Ask students to identify the market equilibrium. *The answer is \$9 an hour.* Ask students, “What is the price floor?” *The price floor (minimum wage) is \$12.* Ask if this makes the price floor binding? *Yes.* Will this price floor affect the market? *Yes.*

Ask students the following:

- What effect will this have on the market? *It will create a surplus.*
- What does a surplus in the market for labor mean? *It means workers will be unemployed.*
- Will the price (wage) be able to fall in order to clear the market? *No, because the minimum wage is a federal law.*

Ask students to recall the chart from the “[Southern States Avoid Minimum Wage-Raising Bandwagon](https://bit.ly/minimum-wage-raising-bandwagon)” (<https://bit.ly/minimum-wage-raising-bandwagon>) article, either displaying it again on a projector or having students refer to their copies (if you distributed the article to students). Ask students the following:

- Is it possible that the federal minimum wage could be binding in some markets, and not others? *Yes, because cost of living differences affect the labor markets in different areas of the country.*
- Given your knowledge of the circumstances in which minimum wage is most likely to be paid, where would it be most likely for an increase in the minimum wage to become a binding price floor? *The South, in leisure and hospitality industries, for part-time work.*

Note: The “earthquake” example is a mnemonic device that may help students remember which price controls affect the market: after an earthquake, you want the ceiling to be above you and the floor below you—then you are likely to be OK. Ceilings above market equilibrium and floors below market equilibrium mean you are OK, too—these are nonbinding and do not affect the market.

20. Tell students they are now going to investigate the status of minimum wage in their state as well as update information on the minimum wage according to educational status. They will also transform historical minimum wage data into current numbers.

21. Distribute Handout 2: “Graphing and Calculating the Minimum Wage,” and have students complete their work using the Federal Reserve Economic Data (FRED) graphing tool and the Federal Reserve Bank of Minneapolis’s CPI calculator. Although step-by-step instructions are given in the handout, if you would like to introduce students to a brief tutorial on how to use FRED, you may find tutorials at this website:

<https://www.stlouisfed.org/education/tools-for-teaching-with-fred>



22. After students have completed their work, review the handout by asking the following questions:

- Does the minimum wage change frequently? *No; it stayed at \$3.35 for 10 years, at \$5.15 for 10 years, and has been at \$7.25 for ten years (as of April 2020).*
- Who is responsible for determining the minimum wage? *Congress.*
- How does education affect your likelihood of working for minimum wages? *In general, more educated people are less likely to earn the minimum wage.*
- Has the minimum wage kept up with inflation? *No, the minimum wage does not change frequently and it has not kept up with inflation.*

23. Ask students, what are some other factors that make it more likely you will earn the minimum wage? What groups are most likely to earn the minimum?

Answers will vary, but should include:

- Working part-time*
- Living in the South*
- Working in the leisure and hospitality industry*
- Women (more likely to work part-time and in leisure and hospitality jobs that pay at or below minimum wage)*
- Teenagers*

24. Handout 3: “Assessment” gives students the following scenario:

You are a student in an online economics class. A fellow student has posted the article “[Southern States Avoid Minimum Wage-Raising Bandwagon](https://bit.ly/minimum-wage-raising-bandwagon)” (<https://bit.ly/minimum-wage-raising-bandwagon>) to the discussion board. The student is 19 years old, lives in a Southern state, and works part-time at a local diner for the minimum wage.

The post says:

“The minimum wage has been stuck at \$7.25 for eight years now, and although the article cites that only 3.3 percent of hourly workers earn the minimum, I fall into two of the categories where you can find over half of minimum wage workers: under 25 and living in the South. Twenty-nine states and the District of Columbia have higher rates, but the article notes that the South has been resistant to raising the wages, as low wages have been key factors in attracting automotive and aerospace manufacturing to the region. Five states in the South don’t even have a minimum wage! Although the article points out that the cost of living is lower in the South, it also mentions that poverty advocates have shown that it is still not enough to provide for the basic necessities of living. There is always a debate between those who say higher wages will cause workers to lose their jobs (and technology will replace them), but on the other hand, a lack of transportation and child care were identified in the article as reasons some workers can’t get the skills they need to earn more. I can remember when my older brother worked for the \$5.15 minimum wage in high school and it did not rise until after he left college. I worry that I will not be seeing a raise any time soon and with inflation, the value of my paycheck is falling every year.”

Read the [article](https://bit.ly/who-works-for-minimum-wage) (<https://bit.ly/who-works-for-minimum-wage>) and post a 200-word response to your fellow student based on the article and the research you have done in this lesson on the minimum wage.



Visual 1: Classroom Corner Signs

1

2

Visual 1: Classroom Corner Signs (Continued)

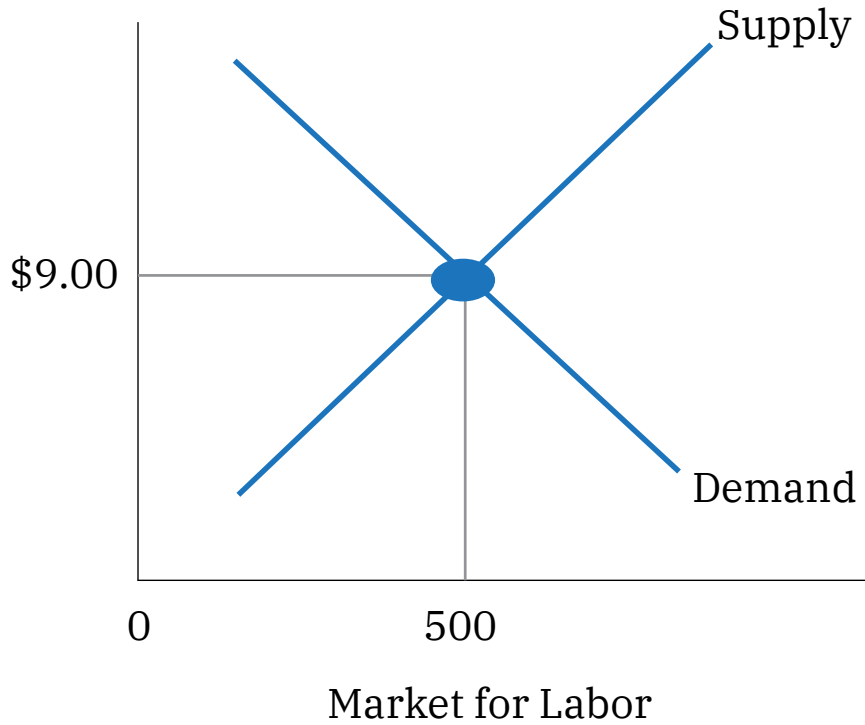
3

4

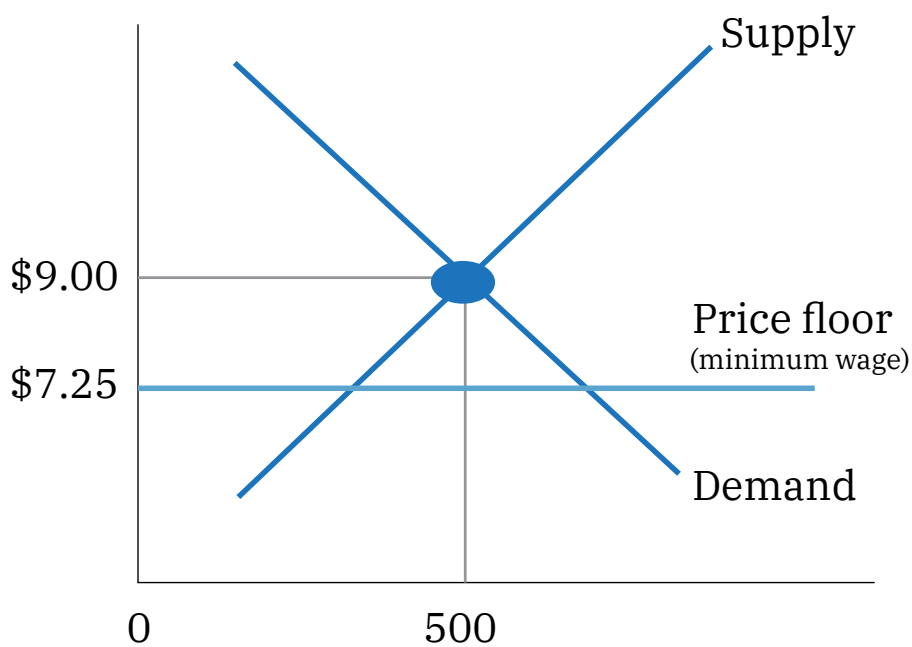


Visual 2: Graphs for Four Corners

Graph A

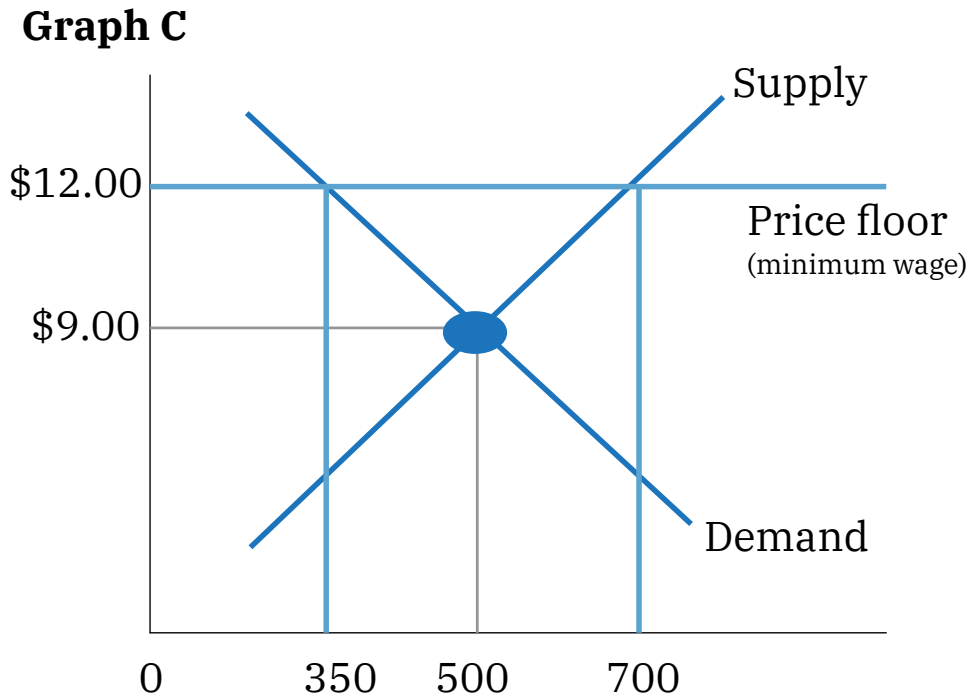


Graph B





Visual 2: Graphs for Four Corners (Continued)





Handout 1: Who Works for Minimum Wage?

Instructions: Mark your answers as you move through each question; each correct answer is worth 10 points.

Question 1: Full- or part-time workers

Corner 1
Full-time _____

Corner 2
Part-time _____

Pts. _____

Question 2: Women or men

Corner 1
Women _____

Corner 2
Men _____

Pts. _____

Question 3: Educational status

Corner 1
High school _____

Corner 2
Some college _____

Corner 3
Associate's _____

Corner 4
Bachelor's _____

Pts. _____

Question 4: Industry

Corner 1:
Wholesale/retail _____

Corner 2: Education/health _____

Corner 3:
Leisure/hospitality _____

Corner 4: Professional/business _____

Pts. _____

Question 5: Region

Corner 1:
Northeast _____

Corner 2:
Midwest _____

Corner 3:
West _____

Corner 4:
South _____

Pts. _____

Question 6: Age group

Corner 1:
16 to 19 _____

Corner 2:
20 to 24 _____

Corner 3:
25 to 29 _____

Corner 4:
30 to 34 _____

Pts. _____

Question 7: Married or never married

Corner 1:
Married _____

Corner 2:
Never married _____

Pts. _____

Question 8: Public or private sector workers

Corner 1:
Private _____

Corner 2:
Public _____

Pts. _____



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Question 9: Years

Corner 1:

1980 _____

Corner 2:

1990 _____

Corner 3:

2000 _____

Corner 4:

2010 _____

Pts. _____

Question 10: States

Corner 1:

Alabama _____

Corner 2:

Virginia _____

Corner 3: Rhode Island _____

Corner 4:

Texas _____

Pts. _____

Total Points _____

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Handout 2: Graphing and Calculating the Minimum Wage

In this exercise, you will be using the Federal Reserve Economic Data (FRED) graphing tool and an online CPI calculator to track minimum wage over time and by education. (If your teacher instructs you to attach your graphs to the handout, follow the instructions at the end of the handout.)

1. Navigate to <https://fred.stlouisfed.org/>, the Federal Reserve Economic Data (FRED) website. In the search bar, type “federal minimum wage rate.” From the results, click “[Federal Minimum Wage Rate under the Federal Fair Labor Standards Act](#).” Click edit graph, click format at the top right, and change the graph type in the drop-down menu to a bar graph. Roll over the graph to find the answers to the following questions:
 - a. What was the minimum wage in 1968?
 - b. For how many years has the federal minimum wage been \$7.25?
 - c. How many years was the minimum wage \$3.35? \$5.15?
 - d. In what years did the minimum wage rise?

Note: If you are a student in Alaska, Arizona, Arkansas, California, Connecticut, Colorado, Delaware, Washington, DC, Florida, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, Ohio, Oregon, Rhode Island, South Dakota, Vermont, Washington, or West Virginia, search for “state minimum wage in (your state)” and answer these questions, repeating the steps in 1 above for the federal minimum:

- a. What is the current minimum wage in your state?
 - b. How many years has this rate been the legal minimum wage?
 - c. By how much does this rate exceed the federal minimum wage (dollar amount or percentage)?
2. Remain in the editing section and follow these steps after selecting the ADD BAR dropdown:
 - a. In the search bar, type “HS13C10.” This will give you the number of people working for minimum wage who attended high school for one to three years. Check the box below the title and then “add to graph.”
 - b. Click “edit graph” and “add line.” Type “HDNCC10,” click on result, then “add data series.” This will add the number of high school graduates working for minimum wage to the graph.
 - c. Use the “add line” feature to add the following series:
 - d. ASDEC10 (minimum wage workers with associate’s degrees)
 - e. BADEC10 (minimum wage workers with bachelor’s degrees)
 - f. MADEC10 (minimum wage workers with master’s degrees)
 - g. DCDEC7 (minimum wage workers with doctoral degrees)



Handout 2: Graphing and Calculating the Minimum Wage (Continued)

When you have completed steps a through g, you should have six lines on the graph. Change the date field to 2002-01-01 to 2021-01-01. This graph shows all of the years these data are available.

Answer the following questions:

How are level of education and being paid the minimum wage related?

The gray shaded area on the graph represents a recession. What trend do you see during the years of the recent recession and immediately after (2010)?

1. Navigate to the U.S. Department of Labor's Wage and Hour Division Chart: <https://www.dol.gov/agencies/whd/minimum-wage/history/chart>. Using the chart, write down the minimum wage for each year in column A. In column B, use the CPI calculator at <https://minneapolisfed.org/> (scroll to the "What is a Dollar Worth?" at the bottom of the page) to calculate how much each of the historical minimum wages would be worth in 2021. The calculator adjusts for inflation over time.

Year	Column A: Minimum Wage	Column B: Inflation Adjusted Minimum Wage
1938		
1956		
1974		
1981		
1997		

Answer the following questions:

1. Has the minimum wage kept pace with inflation?
2. When the minimum wage does not rise for several years, what is likely to happen to the purchasing power of minimum wage workers' income?
3. For 32 years, from 1969 to 2001, the salary for the president of the United States was \$200,000. Using the CPI inflation calculator, calculate the value of \$200 from 1969 dollars into 2001 dollars, then multiply by 1,000. (Larger numbers cannot be read in the calculator.) Answer the following questions:
 - a. How much was \$200,000 in 1969 when translated to 2001 dollars?
 - b. What happened to the purchasing power of the president's salary?
 - c. Who was granted a raise first, the president or minimum wage workers? (Use information from question 1c to answer). Note: The president's salary increased to \$400,000 in 2001.

*Note: If your teacher has asked you to attach your graphs to this assignment, click "download" (upper right hand corner), save them to your computer as an image, PowerPoint or PDF, then print.

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Handout 2: Graphing and Calculating the Minimum Wage (Answer Key)

In this exercise, you will be using the Federal Reserve Economic Data (FRED) graphing tool and an online CPI calculator to track minimum wage over time and by education. (If your teacher instructs you to attach your graphs to the handout, follow the instructions at the end of the handout.)

1. Navigate to <https://fred.stlouisfed.org/>, the Federal Reserve Economic Data (FRED) website. In the search bar, type “federal minimum wage rate.” From the results, click “[Federal Minimum Wage Rate under the Federal Fair Labor Standards Act.](#)” Click edit graph, click format at the top right, and change the graph type in the drop-down menu to a bar graph.
 - a. What was the minimum wage in 1968? *\$1.60*
 - b. For how many years has the Federal minimum wage been \$7.25? *10 (As of 2020)*
 - c. How many years was the minimum wage \$3.35? *10 \$5.15? 10*
 - d. In what years did the minimum wage rise? *1976, 1979, 1980, 1981, 1991, 1992, 1997, 1998, 2008, 2009, 2010*

Note: If you are a student in Alaska, Arizona, Arkansas, California, Connecticut, Colorado, Delaware, Washington, DC, Florida, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, Ohio, Oregon, Rhode Island, South Dakota, Vermont, Washington, or West Virginia, search for “state minimum wage in (your state)” and answer these questions, repeating the steps in 1 above for the federal minimum:

- a. What is the current minimum wage in your state?
- b. How many years has this rate been the legal minimum wage?
- c. By how much does this rate exceed the federal minimum wage (dollar amount or percentage)?

Answers will vary; data will be found in FRED by following steps outlined in 1

2. Remain in the editing section and follow these steps after selecting the ADD BAR dropdown:
 - a. In the search bar, type “HS13C10.” This will give you the number of people working for minimum wage who attended high school for one to three years. Check the box below the title and then “add to graph.”
 - b. Click “edit graph” and “add line.” Type “HDNCC10,” click on result, then “add data series.” This will add the number of high school graduates working for minimum wage to the graph.
 - c. Use the “add line” feature to add the following series:
 - d. ASDEC10 (minimum wage workers with associate’s degrees)
 - e. BADEC10 (minimum wage workers with bachelor’s degrees)
 - f. MADEC10 (minimum wage workers with master’s degrees)
 - g. DCDEC7 (minimum wage workers with doctoral degrees)



Handout 2: Graphing and Calculating the Minimum Wage (Continued)

When you have completed steps a through g, you should have six lines on the graph. Change the date field to 2002-01-01 to 2021-01-01. This graph shows all of the years these data are available.

Answer the following questions:

How are level of education and being paid the minimum wage related? *The higher your level of education, the less likely you are to be working for minimum wage.*

The gray shaded area on the graph represents a recession. What trend do you see during the years of the recent recession and immediately after (2010)? *Workers who did not have a high school diploma had a much higher chance of working for minimum wage than other groups—in 2007 1.1 percent worked for minimum wage; in 2010 8.2 percent did. Rates also rose for other groups, but even in 2010, those without a high school diploma were nearly four times as likely as high school graduates to be working for minimum wage. (Students may ask why this seems to contradict the information about high school dropouts in the four corners exercise; the data are for workers in the labor force at each level of education—in the four corners exercise, these were statistics for all who earned the minimum wage as a percentage of the whole.)*

1. Navigate to the U.S. Department of Labor's Wage and Hour Division Chart: <https://www.dol.gov/agencies/whd/minimum-wage/history/chart>. Using the chart, write down the minimum wage for each year in column A. In column B, use the CPI calculator at <https://minneapolisfed.org/> (scroll to the "What is a Dollar Worth?" at the bottom of the page) to calculate how much each of the historical minimum wages would be worth in 2021. The calculator adjusts for inflation over time.

Year	Column A: Minimum Wage	Column B: Inflation Adjusted Minimum Wage
1938	\$0.25	\$4.54
1956	\$1.00	\$9.40
1974	\$2.00	\$10.37
1981	\$3.35	\$9.42
1997	\$5.15	\$8.20

Answer the following questions:

1. Has the minimum wage kept pace with inflation? *No. The minimum wages in these years (except for 1938) were all higher than today's minimum wage of \$7.25 when adjusted for inflation.*
2. When the minimum wage does not rise for several years, what is likely to happen to the purchasing power of minimum wage workers' income? *Over time, inflation would lower the purchasing power of workers' wages when the minimum wage does not change for several years.*

Who Works for Minimum Wage? (Updated 2020)

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3. For 32 years, from 1969 to 2001, the salary for the president of the United States was \$200,000. Using the CPI inflation calculator, calculate the value of \$200 from 1969 dollars into 2001 dollars, then multiply by 1,000. (Larger numbers cannot be read in the calculator.) Answer the following questions:
- How much was \$200,000 in 1969 when translated to 2001 dollars? *\$200,000 in 1969 dollars was equal to \$965,650 in 2001 dollars.*
 - What happened to the purchasing power of the president's salary? *The purchasing power of the president's salary fell during these years.*
 - Who was granted a raise first, the president or minimum wage workers? (Use information from question 1c to answer). Note: The president's salary increased to \$400,000 in 2001. *Minimum wage workers had eight raises between 1969 and 2001, so they got a raise before the president.*



Handout 3: Assessment

You are a student in an online economics class. A fellow student has posted the article “[Southern States Avoid Minimum Wage-Raising Bandwagon](https://bit.ly/minimum-wage-raising-bandwagon)” (<https://bit.ly/minimum-wage-raising-bandwagon>) to the discussion board. The student is 19 years old, lives in a southern state, and works part-time at a local diner for the minimum wage.

The post says:

“The minimum wage has been stuck at \$7.25 for eight years now, and although the article cites that only 3.3 percent of hourly workers earn the minimum, I fall into two of the categories where you can find over half of minimum wage workers: under 25 and living in the South. Twenty-nine states and the District of Columbia have higher rates, but the article notes that the South has been resistant to raising the wages, as low wages have been key factors in attracting automotive and aerospace manufacturing to the region. Five states in the South don’t even have a minimum wage! Although the article points out that the cost of living is lower in the South, it also mentions that poverty advocates have shown that it is still not enough to provide for the basic necessities of living. There is always a debate between those who say higher wages will cause workers to lose their jobs (and technology will replace them), but on the other hand, a lack of transportation and child care were identified in the article as reasons some workers can’t get the skills they need to earn more. I can remember when my older brother worked for the \$5.15 minimum wage in high school and it did not rise until after he left college. I worry that I will not be seeing a raise any time soon and with inflation, the value of my paycheck is falling every year.”

Read the [article](https://bit.ly/who-works-for-minimum-wage) (<https://bit.ly/who-works-for-minimum-wage>) and post a 200-word response to your fellow student based on the article and the research you have done in this lesson on the minimum wage.

Answers will vary, but should include information such as: getting an education will improve your chances of working for higher wages, full-time workers earn more than part-time workers, leisure and hospitality workers are more likely to be paid the minimum, lower wages in the South do reflect the lower cost of living, less people are working for minimum wage now than in the past, minimum wage has not kept pace with inflation.