

What Is Unemployment, How Is It Measured, and Why Does the Fed Care?



Lesson Description

In this lesson, students read and interpret choropleth maps, which contain unemployment data. They compare verbal descriptions of the labor market from the Federal Reserve's *Beige Book* with the mapped data. In addition, students compare unemployment data for different years. Students access or observe how to access this data online.

Note: Data used in this lesson are from the years 1991 and 2000. More recent data were not used because these data are updated periodically. Therefore, answers keys for more recent data would change.

Grade Level

7-10

Concepts

Choropleth map
Federal Reserve System
Labor force
Legend/key
Unemployment
Unemployment rate

Objectives

Students will:

- Define labor force and unemployment.
- Explain how the unemployment rate is computed.
- Compare unemployment data over different time periods.
- Compare unemployment data and *Beige Book* descriptions of the labor market.
- Explain why the Federal Reserve System cares about national unemployment data.

Content Standards

National Standards in Economics

- **Standard 19:** Unemployment imposes costs on individuals and nations. Unexpected inflation imposes costs on many people and benefits some others because it arbitrarily redistributes purchasing power. Inflation can reduce the rate of growth of national living standards because individuals and organizations use resources to protect themselves against the uncertainty of future prices.
 - Benchmark 2, Grade 8: The labor force consists of people age 16 and over who are employed or actively seeking work.

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- Benchmark 1, Grade 12: The unemployment rate is the percentage of the labor force that is willing and able to work, does not currently have a job and is actively looking for work.

National Standards in Geography

- **Standard 1:** How to use maps and other geographic representations, tools and technologies to acquire, process and report information.
- **Standard 11:** The patterns and networks of economic interdependence on earth's surface.
- **Standard 17:** How to apply geography to interpret the past.
- **Standard 18:** To apply geography to interpret the present and plan for the future.

National Council for the Social Studies Strands

- People, places and environment
- Production, distribution and consumption

Time Required

60 minutes

Materials

- Two small yellow slips of paper
- Three small blue slips of paper
- 20 small green slips of paper
- Small container in which to place the slips of paper
- Visual 1
- A copy of Handout 1 for each student
- A copy of Handout 1—Answer Key for the teacher
- A copy of Handout 2 for each student
- A copy of Handout 2—Answer Key for the teacher
- A copy of Handout 3 for each student
- A copy of Handout 3—Answer Key for the teacher
- Internet access
- Calculator for each pair of students

Before the start of class, place five desks together in one area of the room. Remove two additional desks so that they are not available for anyone to sit in. Leave the remaining 18 desks as they normally would be in the classroom. As students enter the class, have each of them draw a slip of paper from the container. *Note: This activity was designed for a class of 25. For smaller classes, reduce the number of green slips of paper. For larger classes, increase the number of slips of paper. For example, if the number of students is 30, increase the number of yellow slips by one, the number of blue slips by two and increase the number of green slips by two. For smaller classes, there should be one or two fewer desks in the center*

of the classroom than there are students with green slips of paper. For the larger classes, add the same number of desks to the smaller group of desks as the number of yellow and blue slips of paper added. There should be at least one or two fewer desks in the center of the classroom than there are students with green slips of paper.

Procedures

1. As students enter the classroom, have each of them draw a slip of paper from the container. Tell students not to take their seats, but instead to stand along the walls of the classroom.
2. Explain that on the way to school today there were two news reports. One report was about unemployment, and the other was about the Federal Reserve. Ask the students for a definition of unemployment. (*Answers will vary. Some students may say that unemployment is people not working.*) Ask the students if they know what the Federal Reserve is. (*Answers will vary.*)
3. Ask the students with yellow slips of paper to raise their hands. Explain that these students represent those in the community who are younger than 16, and because of that, they are not eligible to work. Ask these students to take seats in the smaller group of desks.
4. Ask the students with the blue slips of paper to raise their hands. Explain that these students represent those who are not looking for work because they are retired, staying home with children or have chosen not to work. Ask these students to take the remaining seats in the smaller group of desks.
5. Ask the students who are still standing what color slip of paper they have. (*green*) Explain that they represent people who are 16 years old or older and who are looking for work. Tell those students to take seats in the center of the room. After a while it should become clear that there are two students who do not have seats. Explain that these two students represent unemployment in the classroom.
6. Display *Visual 1: Classroom Labor Force, Employment and Unemployment* and record the appropriate numbers on each line. Ask the two students without seats why they don't have seats (*teacher didn't provide seats, didn't get to seats quickly enough*) and how they feel (*cheated, upset, embarrassed*) Have students help move the desks back and ask all students to take their seats.
7. Explain that the **unemployment rate** is an important economic indicator that helps people understand how healthy or strong the economy is. If people who want to work are able to find jobs, the economy is healthier than it is when people who want to work cannot find jobs. Every month, the U.S. Bureau of Labor Statistics releases the latest unemployment statistics, including the Civilian Unemployment Rate.

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8. Explain that the unemployment rate is the percent of the labor force that does not have a job. Explain that in the U.S. the **labor force** is the number of people 16 years or older who are currently employed or actively seeking employment. Refer to Visual 1 and point out the size of the labor force in the classroom.
9. Explain that in the U.S. the unemployed are those who are part of the labor force who aren't employed. Refer to Visual 1 and point out the number of unemployed (those unable to find seats) in the classroom.
10. Tell students that unemployment is reported as a percent of the labor force. To calculate the unemployment rate, divide the number of people who are unemployed by the number of people in the labor force and multiply the decimal by 100. Demonstrate by completing the problem on Visual 1.
11. Explain that the members of the labor force who were able to find work ("green slip" seats in the classroom) represent the employed. In the U. S. economy, those in the labor force who have jobs, full- or part-time, are employed. Ask the students what percent of the labor force in the classroom is employed. (*100 percent, minus the unemployment rate = percent of labor force employed*)
12. Tell the students that there are labor force, unemployment and employment data available for the United States and for individual states and counties in the United States, and that the students will be using a web site called GeoFRED™ to look at these data.
13. Display the GeoFRED web site located at <http://geofred.stlouisfed.org/> and explain that GeoFRED is a tool provided by the Federal Reserve Bank of St. Louis that allows people to create **choropleth maps** to show data. Discuss the following.
 - A choropleth map is a thematic map based on a specific set of data. In this case, it is unemployment data.
 - Unemployment data are ratio values, so graded colors are used to show least to greatest levels of unemployment (lighter shades for lower values and darker shades for higher values).
 - To produce a choropleth map, people group the observations into a set of classes based on data values. (In GeoFRED, ranges of unemployment rates are used to determine each state's shading from light yellow to dark orange.) Then, shade each class with an appropriate color of shading pattern.
14. Tell students that the map also includes a legend. A **legend** (also referred to as a **key**), is the reference area on a map. The legend lists and explains the colors, symbols, line patterns, shadings and annotation used on a map. Often the legend includes the scale and other map information.

15. Distribute *Handout 1: Unemployment Data for 2000 and the Beige Book*. Tell students that GeoFRED allows people to view unemployment data for different years. On the GeoFRED map, click the tab labeled “Edit Data/Layers” located above the map under the Data tab, check the appropriate space in the drop-down boxes to read: Area-State; Data-Unemployment Rate (Not Seasonally Adjusted); Frequency-Annual; Year-2000; Show Data Values-Yes.

Under the Layers tab, clear Lakes and Rivers and any other boxes that might be checked, except States. (Use the scroll bar to see all selection boxes.) Click “Update Map.”

Note: To display all unemployment values and state labels, it will be essential to use the zoom feature by clicking on the area you want enlarged. To return to original map, click the (–) scale at right and then hit the star to center map.

16. Explain that this map shows unemployment data by state for 2000. Explain the color-coded legend. Tell the students that a higher unemployment rate means that a larger percentage of the labor force—people 16 years of age and older who are actively seeking jobs—are not able to find jobs. Discuss the following:

- What color are states shaded if they have the lowest rates of unemployment? (*very light yellow or cream*)
- Name some states with high rates of unemployment. (*Answers will vary but may include Mississippi or West Virginia.*)

Note: Data for unemployment comes directly to GeoFRED from the Bureau of Labor Statistics, which treats the data from the District of Columbia as a state.

17. Tell students that the class will refer to the map to answer the first four questions on Handout 1. As answers are decided, tell students to write the answers on their handouts. Use *Handout 1: Unemployment Data for 2000 and the Beige Book—Answer Key* to check the answers.
18. Go to www.federalreserve.gov/fomc/beigebook/2000/ and explain that the *Beige Book* is a summary of economic conditions based on reports and interviews with business leaders and other contacts in the Federal Reserve’s 12 districts. Explain that the Federal Reserve, the central bank of the United States, studies regional, national and international economic conditions in order to make monetary policy decisions (decisions about the U.S. money supply).
19. Call on a student to read aloud the paragraph above the calendar on the web site which explains the *Beige Book*.
20. Click on the [Report](#) link for January 19, 2000. Scroll down to the Employment section. Read the first sentence in that section and instruct students to copy the sentence on Handout 1 under January 19, 2000. Explain that this statement is intended to give a general picture of employment in the United States. (Optional: If time permits, you may wish to read several additional

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sentences in that section to the class, which may further describe employment conditions.)

21. Follow the same procedure for the other months identified on Handout 1. Note that different editions of the *Beige Book* have some variation in how the employment section is titled. Give students time to write the first sentence describing employment conditions for each month specified on Handout 1. (An answer key is provided in Handout 1—Answer Key.)
22. Direct students to look at the five descriptions of the labor market based on the one sentence for each of the five months that they copied from the *Beige Book*. Ask students if they think the descriptions reflect the GeofRED data for 2000. (*Answers will vary.*)
23. Ask students to raise their hands if they think the GeofRED map data gives a clearer picture of the unemployment situation than do the *Beige Book* descriptions. Then ask students to raise their hands if they think the *Beige Book* gives a clearer picture of the unemployment situation than does the GeofRED map. (*Opinions will vary.*)
24. Go back to the GeofRED web site located <http://geofred.stlouisfed.org/> and click the tab labeled “Edit Data/Layers” located above the map. Check the appropriate spaces in the drop-down boxes to read: Area-State; Data-Unemployment Rate (Not Seasonally Adjusted); Frequency-Annual; Year-1991.

Under the Layers tab, clear Lakes and Rivers and any other boxes that might be checked, except States. (Use the scroll bar to see all selection boxes.) Click “Update Map.”

Note: To display all unemployment values and state labels, it will be essential to use the zoom feature by clicking on the area you want enlarged. To return to original map, click the (–) scale at right and then hit the star to center map.

View the map for 1991 and explain the legend.
25. Distribute a copy of *Handout 2: Unemployment Data and Beige Book for 1991* to each student. Tell students to refer to the map to answer the first four questions on the handout. Ask students to share their answers. Use *Handout 2: Unemployment Data and Beige Book for 1991—Answer Key* to check answers.
26. Direct students to look on Handout 1 at the five descriptions of the 2000 labor market based on the one sentence for each of the five months that they copied from the *Beige Book*. Ask students if the type of descriptions from the *Beige Book* for 2000 reflect the GeofRED data for 1991. (*No.*) Why? (*More states have higher rates of unemployment in 1991 than in 2000, so the language should describe weak labor market conditions for 1991.*)
27. Challenge students to think like authors of the *Beige Book* and follow the instructions on the bottom half of *Handout 2*. Use *Handout 2—Answer Key* to check answers.

28. Remind the students that unemployment is an important measure of the health of the economy. Explain that the **Federal Reserve System**, often referred to as “the Fed,” was established in 1913 as the central bank of the United States. The health of the U.S. economy is a primary concern of the Fed. The goals of the Fed include maintaining stable prices and promoting full employment and economic growth.
29. Point out that unemployment varies from state to state as evidenced by the GeoFRED map. The Federal Reserve is interested in the state data; however, the Fed’s major concern is the health of the U.S. economy, not the health of a particular state. The *Beige Book* statements illustrate this idea. Regional descriptions in the *Beige Book* contribute to the overall picture of U.S. economic conditions.
30. Point out that whereas the Fed is responsible for creating a healthy economy, Federal, state and local governments develop policies and create programs to address specific unemployment conditions. The federal government has unemployment compensation insurance, and state and local governments often have a variety of services including vocational training, career development centers and other services to assist the unemployed.

Closure

31. Review key concepts in the lesson by asking the following questions.
 - What is unemployment? (*a condition in which not all people in the labor force who want a job, have a job*)
 - What is the unemployment rate? (*the percent of the civilian labor force that does not have a job*)
 - How is the unemployment rate calculated? (*Divide the number of unemployed by the number in the labor force and multiply that decimal by 100 to get the percent unemployed.*)
 - Who is classified as in the labor force? (*people 16 years or older who are currently employed or actively seeking employment*) Who is classified as not in the labor force? (*people under 16 years of age and people 16 years or older who are not actively seeking employment*)
 - What is an example of someone who is not in the labor force? (*Answers will vary but may include children under age 16, teenagers and adults who are not looking for work and retired people.*)
 - What kind of map is GeoFRED, and what does the darker shading mean compared with the lighter shading of states? (*GeoFRED is an online choropleth map. The darker-shaded states indicate higher unemployment rates relative to the lighter-shaded states.*)
 - What organization produces the *Beige Book*, and what information does it provide? (*The Beige Book is produced by the Federal Reserve and is a summary of economic conditions based on reports and interviews with business leaders and other contacts in the Federal Reserve’s 12 districts.*)
 - What is the Federal Reserve System? (*It is the central bank of the United States.*)
 - Why does the Fed care about unemployment? (*The Fed’s goals include maintaining stable prices, full employment and economic growth.*)

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Assessment

1. Have students look at GeoFRED data for another year. Ask them to write two sentences, similar in style to those from the *Beige Book* to describe the unemployment situation in that year. (Optional: Have students look at the *Beige Book* statements for that year which describe unemployment and write down one or two sentences from the *Beige Book*. Then have students compare and contrast their description to that of the *Beige Book* by examining language, content and style of the student description and the *Beige Book* description.) *(Answers will vary.)*
2. Direct students to look at the GeoFRED map for the presidential election years 1996 and 2000. Identify all of the states on the map for each of these years that fall into the two classifications of highest unemployment rates (according to the legend for each map).

Note: Alaska and Hawaii are not included on this map.

Year 1996:

New Jersey, Louisiana, Mississippi, New York, California, West Virginia, New Mexico, District of Columbia (Note: When you print the map using the .pdf option at the top right, the specific unemployment rates for each state will be printed in addition to the map.)

Year 2000:

Idaho, Montana, California, Louisiana, New Mexico, Washington, Oregon, West Virginia, District of Columbia, Mississippi (Note: When you print the map using the .pdf option at the top right, the specific unemployment rates for each state will be printed in addition to the map.)

3. Distribute a copy of *Handout 3: Calculating Unemployment Rates* to each student. Tell students to work in pairs, read the directions and answer the questions. Review the answers on *Handout 3—Answer Key* with the students.

Visual 1: Classroom Labor Force, Employment and Unemployment

	Not in labor force	In labor force
Number of people under 16		
Number of people not seeking work		
Number of unemployed people 16+ but actively looking for work		
Number of people 16+ who are employed	+	
Total labor force	=	

Calculating the Unemployment Rate

$$\frac{\text{Number of unemployed}}{\text{Labor force}} \times 100 = \text{unemployment rate}$$

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Handout 1: Unemployment Data for 2000 and the Beige Book

According to the GeoFRED map for 2000:*

1. How many states were in the mid-range of the unemployment rate, i.e. ≥ 3.9 to < 4.6 percent?

2. How many states had a greater unemployment rate than the mid-range, i.e. ≥ 4.6 percent?

3. How many states had a lower unemployment rate than the mid-range, i.e. < 3.9 percent?

4. How many states had a 3.9 percent or more unemployment rate?

** Because only the contiguous states are shown on this view, determine your answers using data from these states only, omitting data for Alaska and Hawaii.*

Go to the following *Beige Book* descriptions of the condition of labor in the economy and write the first sentence that is found after the headings as indicated:

January 19, 2000
Employment

May 3, 2000
Labor Markets

August 9, 2000
Labor Markets

November 1, 2000
Labor Markets

December 6, 2000
Labor Markets, Wages, Prices

Handout 1: Unemployment Data for 2000 and the Beige Book—Answer Key

Note: Choose PDF located to the right of the “Help” link, top right of map, and then print to get both the GeoFRED map and the data for each state. To print the map only, choose the “Print” link located to the right of the “Help” link, top right of map.

According to the GeoFRED map for 2000:*

1. How many states were in the mid-range of the unemployment rate, i.e. ≥ 3.9 to < 4.6 percent?

12

(States include: Ohio, Tennessee, Alabama, Arkansas, Arizona, Kentucky, Pennsylvania, Rhode Island, Texas, Illinois, Nevada and New York)

2. How many states had a greater unemployment rate than the mid-range, i.e. ≥ 4.6 percent?

10

(States include: Idaho, Montana, California, Louisiana, New Mexico, Washington, Oregon, West Virginia, District of Columbia and Mississippi)

3. How many states had a lower unemployment rate than the mid-range, i.e. < 3.9 percent?

27

(States include: Connecticut, Virginia, Colorado, New Hampshire, South Dakota, Vermont, Iowa, Massachusetts, Nebraska, Indiana, North Dakota, Minnesota, Oklahoma, Delaware, Maine, Missouri, Utah, Wisconsin, Georgia, Maryland, South Carolina, Michigan, New Jersey, Florida, Kansas, North Carolina and Wyoming)

4. How many states had a 3.9 percent or more unemployment rate?

22

(Add answers for number 1 and number 2 above.)

* Because only the contiguous states are shown on this view, determine your answers using data from these states only, omitting data for Alaska and Hawaii.

Go to the following *Beige Book* descriptions of the condition of labor in the economy and write the first sentence that is found after the headings as indicated:

January 19, 2000 Employment

All Districts reported tight labor markets.

May 3, 2000 Labor Markets

Difficulty in finding and retaining qualified employees remained a common refrain in District reports as worker shortages persisted in every District, and practically every industry and occupation.

August 9, 2000 Labor Markets

Nearly all Districts reported that labor markets remain very tight, and the labor shortage has become more severe in the Boston and Kansas City Districts.

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November 1, 2000

Labor Markets

Labor markets remained taut, and some reports cited notable upward pressure on wages.

December 6, 2000

Labor Markets, Wages, Prices

While labor markets continued to be tight across most of the nation, there were signs of softening in Boston, Cleveland, and Atlanta.

Handout 2: Unemployment Data for 1991 and the Beige Book

According to the GeoFRED map for 1991:*

1. How many states were in the mid-range of the unemployment rate, i.e. ≥ 5.8 to < 7.4 percent?

2. How many states had a greater unemployment rate than the mid-range, i.e. ≥ 7.4 percent?

3. How many states had a lower unemployment rate than the mid-range, i.e. < 5.8 percent?

4. How many states had a 5.8 percent or more unemployment rate?

** Because only the contiguous states are shown on this view, determine your answers using data from these states only, omitting data for Alaska and Hawaii.*

Pretend that you are a contributing writer to the 1991 *Beige Book*. Based on the data above, and comparing that with data in Handout 1 (for year 2000), which of the following statements might you write about the employment conditions in 1991? *Hint: There might be more than one correct response.*

- A. Labor markets were strong.
- B. Labor markets posted widespread gains.
- C. Labor markets remained generally slack.
- D. Labor markets remain soft according to most District reports.

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Handout 2: Unemployment Data for 1991 and the Beige Book—Answer Key

According to the GeoFRED map for 1991:*

1. How many states were in the mid-range of the unemployment rate, i.e. ≥ 5.8 to < 7.4 percent?

26

(States include: North Carolina, Virginia, Idaho, South Carolina, Maryland, Oklahoma, Montana, Nevada, Washington, Oregon, Connecticut, Missouri, Ohio, Tennessee, Vermont, New Jersey, Alabama, Louisiana, Pennsylvania, Texas, Arkansas, Arizona, Illinois, New Mexico, New Hampshire and New York.)

2. How many states had a greater unemployment rate than the mid-range, i.e. ≥ 7.4 percent?

10

(States include: Kentucky, Florida, Maine, District of Columbia, California, Rhode Island, Massachusetts, Mississippi, Michigan and West Virginia)

3. How many states had a lower unemployment rate than the mid-range, i.e. < 5.8 percent?

13

(States include: Nebraska, South Dakota, North Dakota, Kansas, Iowa, Utah, Georgia, Wyoming, Minnesota, Wisconsin, Colorado, Indiana and Delaware)

4. How many states had a 5.8 percent or more unemployment rate?

36

(Add answers for number 1 and number 2 above.)

* Because only the contiguous states are shown on this view, determine your answers using data from these states only, omitting data for Alaska and Hawaii.

Pretend that you are a contributing writer to the 1991 *Beige Book*. Based on the data above, and comparing that with data in Handout 1 (for year 2000), which of the following statements might you write about the employment conditions in 1991? *Hint: There might be more than one correct response.*

- A. Labor markets were strong.
- B. Labor markets posted widespread gains.
- C. Labor markets remained generally slack.
- D. Labor markets remain soft according to most District reports.

Answer: Responses C and D are appropriate because they describe a weak labor market.

Handout 3: Calculating Unemployment Rates

The country of Altimina has a population of 150,000. According to the latest data, there are 20,000 people under the age of 16, and 30,000 people who are over the age of 16, but not looking for work. Currently, there are 5,000 people who are 16 or older and actively looking for work. The president of Altimina has asked you what the size of the labor force is, what the number of unemployed is and what the unemployment rate for Altimina is. Please show your work.

The labor force in Altimina is: _____

The number of unemployed is: _____

The unemployment rate is: _____

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Handout 3: Calculating Unemployment Rates—Answer Key

The country of Altinima has a population of 150,000. According to the latest data, there are 20,000 people under the age of 16, and 30,000 people who are over the age of 16, but not looking for work. Currently, there are 5,000 people who are 16 or older and actively looking for work. The president of Altinima has asked you what the size of the labor force is, what the number of unemployed is and what the unemployment rate for Altinima is. Please show your work.

The labor force in Altinima is: 100,000

The number of unemployed is: 5,000

The unemployment rate is: 5%

	Not in labor force	In labor force
Number of people under 16	20,000	
Number of people not seeking work	30,000	
Number of unemployed people 16+ but actively looking for work		5,000
Number of people 16+ who are employed	+	95,000
Total labor force	=	100,000

$$\frac{\text{Number of unemployed}}{\text{Labor force}} \times 100 = \text{unemployment rate}$$

$$\frac{5,000}{100,000} \times 100 = 5\%$$

Note: There are several ways in which students can show their work. The table above represents one way.