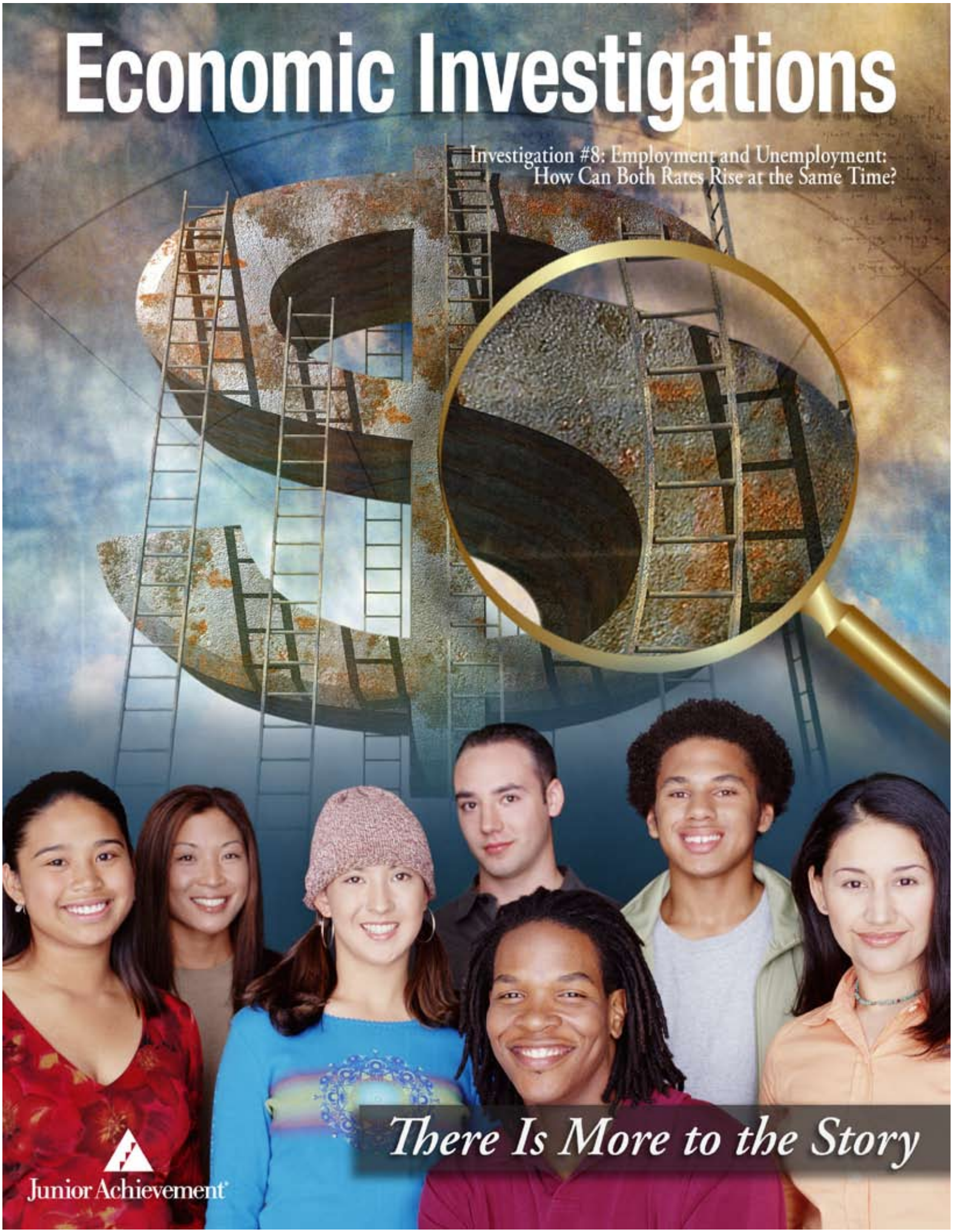
Economic Investigations

Investigation #8: Employment and Unemployment: How Can Both Rates Rise at the Same Time?



There Is More to the Story

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Economic Investigations: There Is More to the Story

"Economic Investigations: There Is More to the Story" was a National Science Foundation funded project, which began in September 2003. The Social Science Education Consortium (SSEC) of Boulder, Colorado, was the grantee agency. James Davis, Executive Director of the SSEC, was the project director, and Donald Wentworth, Professor Emeritus of Pacific Lutheran University, was project co-director.

The overall project goal was to help students achieve a deeper understanding of puzzling economics questions so they could explain and provide thorough, supported, and justifiable accounts of economic phenomena, facts, and data. Three objectives guided project development:

- Create a classroom laboratory orientation for the investigations similar to those students would encounter in a laboratory science course.
- Develop quantitative skills in students—more so than they would acquire in a standard high school economics course.
- Focus the investigations on intriguing economics questions to spark student and teacher interest.

The Investigations

Twelve investigations were created by teams of economics curriculum materials developers and high school economics teachers. The titles of each investigation identify its content area followed by the main question addressed in the investigation. The investigation titles are:

Microeconomic Investigations

1. Women's Wages: Do Women Earn Less Money Than Men?
2. Organ Transplants: Where Are the Missing Kidneys?
3. Minimum Wage: Does Raising the Rate Help Younger Workers?
4. Poverty: How Can a Family Be in Poverty and Not Be Poor?
5. Health Care: Who Should Pay the Cost?

Macroeconomic Investigations

6. Performance of the National Economy: How Do We Measure the Economy's Health?
7. Inflation: Are Higher Prices the Only Problem?
8. Employment and Unemployment: How Can Both Rates Rise at the Same Time?
9. Fiscal Policy: Can Congress Diagnose and Treat an Ailing Economy?
10. Monetary Policy: Can the Federal Reserve Diagnose and Treat an Ailing Economy?

International Investigations

11. African-U.S. Trade: What's in It for Africa?
12. Imports: Does American Employment Decline Because of International Trade?

Investigation and Field Test Results

The investigations were field-tested by high school teachers in the spring semesters of 2004 and 2006. Field test locations included Jefferson County Colorado; Milwaukee, Wisconsin; Sioux Falls, South Dakota; Scottsdale/Mesa, Arizona; and Plano, Texas. Based on this field test, the investigations were found to promote deeper student understanding of economic issues through the use of effective instructional methods. Students acknowledged that they learned a great deal from the investigations and teachers stated they would recommend the investigations to other teachers.

Cooperative Publishing Agreement

The Social Science Education Consortium has transferred the copyright of these investigations to JA Worldwide. JA Worldwide is making them available to teachers by posting them on the JA Worldwide website (www.ja.org) and distributing them in CD-ROM format. The investigations also will be posted on the SSEC website (www.socialscience-ed.org). Ultimately, the investigations will support the revised Junior Achievement high school program, JA Economics.

Authorship and Consultants

The project was fortunate to have an excellent group of authors and consultants. These individuals are listed below.

Colorado Development Team

Laura Burrow, Jefferson County Public Schools
James Davis, Social Science Education Consortium
Lewis Karstensson, University of Nevada, Las Vegas

Washington Development Team

Penny Brunken, Sioux Falls (SD) Public Schools
Donald Wentworth, Professor Emeritus, Pacific Lutheran University

Wisconsin Development Team

Thomas Fugate, Homestead High School, Mequon, WI
Mark Schug, University of Wisconsin-Milwaukee

The economics consultant to the project was Norris Peterson, Professor of Economics, Pacific Lutheran University, Tacoma, Washington.

The project evaluator was William Walstad, Professor of Economics, University of Nebraska, Lincoln.

Nancy Baldrica, Excelsior, Minnesota, served in an editorial and desktop-publishing capacity on the project.

Field-Test Teachers

Below are the teachers who completed field tests during the second year of the project.

Arizona

Amy Willis, coordinator, Arizona Council of Economic Education
Dan Korzec, St. Johns High School, St. Johns, AZ
Bridget Olson, Mesa High School, Mesa, AZ
Debbie Henney, Highland High School, Gilbert, AZ
John Kessler, Goodyear, AZ

Colorado

Tracey Boychuk, Pomona High School, Arvada, CO
Laura Burrow, Bear Creek High School, Lakewood, CO

South Dakota

Penny Brunken, Roosevelt High School, Sioux Falls, SD
Jeanette Remily, Britton-Hecla High School, Britton, SD
Kellie Schultz, Washington High School, Sioux Falls, SD
Erika Vont, Akron-Westfield High School, Akron, IA

Texas

Julie Meek, Plano East Senior High School, Plano, TX

Wisconsin

Tom Fugate, Homestead High School, Mequon, WI
Mark Cywinski, Brown Deer High School, Brown Deer, WI
Andy Bosley, Homestead High School, Mequon, WI

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Investigation # 8:
Employment and Unemployment: How Can Both Rates Rise at the Same Time?

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Investigation #8: Employment and Unemployment: How Can Both Rates Rise at the Same Time?

Introduction

Most people read about changes in the unemployment rate with interest. They see it as an important indicator of how well the economy is functioning. Yet, it often is a source of confusion. Most people think that an adult is unemployed if he or she does not have a job. They also think that people receiving unemployment compensation payments are counted to create the unemployment rate figures. Neither is the case. There is more to the story.

The Bureau of Labor Statistics (BLS) carefully gathers data on employment, and defines who is part of the labor force, who is employed, and who is unemployed. These definitions and methods lead to some interesting and confusing results. This investigation will help students understand and use this information to judge the performance of the economy.

The Bureau of Labor Statistics publishes an easily accessible document (online at www.bls.gov/cps) entitled "How the Government Measures Unemployment," found under "Publications and Other Documentation," that details much of this information, with specific examples to help students.

Student Comprehension

This investigation helps students understand and accurately use employment and unemployment statistics to analyze the growth or decline of activity in the economy. The following issues will be addressed:

- How is the labor force measured?
- Who is considered a discouraged worker, and how do discouraged workers influence the unemployment rate?
- Can the number of employed and unemployed people increase or decrease at the same time?
- What statistics do economists like to use to understand changes in the labor force?

Concepts

Choice
Incentives
Labor Force
Employment Rate
Unemployment Rate
Employment/Population Ratio

Objectives

After completing this investigation, students will be able to

- Explain how employment, unemployment, and labor-force numbers are obtained and published.
- Calculate the employment and unemployment rate using sample figures.
- Explain how the employment and unemployment rates can both move in the same direction.
- Reconsider commonly held beliefs about employment data.
- Investigate historical changes in the Employment/Population Ratio.

Economic Principles

The labor market constantly changes as people leave jobs, change locations, shift to new professions, or experience job layoffs. The work opportunity changes as the economy changes. Both employees and employers in the private sector make choices about employment based on the incentives (wages and benefits, costs and profits) presented to them on an individual basis.

The Bureau of Labor Statistics, a federal agency working under the Department of Labor, attempts to capture a statistical picture of this workforce each month by measuring the numbers of employed and unemployed workers as a percentage of the total labor force. Definitions are key to these statistics.

- People over 16 years of age who have jobs and who are not institutionalized (in schools, the armed forces, nursing homes, or mental institutions) are classified as *employed.*
- People over 16 years of age who are not institutionalized, and who are jobless, looking for jobs, and available to work, are classified as *unemployed.*
- People over 16 years of age who are not institutionalized, who do not have a job, and who are not actively seeking a job because they think the search will not result in a job are classified as *discouraged.*
- People over 16 years of age who are employed and unemployed are classified as the *labor force.* Discouraged workers, however, are not counted as part of the labor force.

Investigation

Description

In this investigation, students are asked to explain a *Wall Street Journal* (WSJ) announcement about unemployment, and look for a contradiction in the message. Then they are introduced to the definitions of employment, unemployment, and labor force. Using these definitions, students are asked to calculate the percentage relationships in a sample survey to help explain the contradiction in the *WSJ* announcement. Next, they are asked to consider the Employment/Population Ratio as an alternative measure of change in the labor force. Lastly, students are asked to test their knowledge of unemployment and employment by comparing it to commonly held beliefs.

Time Required: 60 minutes

Technology: This investigation requires Internet access.

Materials

Visual #1	News Alert from the *Wall Street Journal*, September 5, 2003
Visual #2	Measuring Employment: Some Basic Information
Visual #3	The Employment/Population Ratio: An Alternative Measure
Visual #4	Popular Conceptions about Unemployment Statistics
Activity #1	Calculating the Unemployment Rate

Procedure

1. Explain that job losses and unemployment are serious, negative events in the economy. Tell students that when people are unemployed, the economy wastes some of its human resources and experiences lower levels of consumer spending. Discuss how unemployed individuals experience a sharp loss of income and economic opportunity. Explain that, for this reason, both policymakers and citizens watch for the monthly report on unemployment with special interest.
2. Tell students that sometimes the unemployment report's message can be confusing. Show students **Visual #1 – News Alert from the Wall Street Journal, September 5, 2003,** and ask them to consider the confusion this article could create for the general public. Discuss these two major points:
    - More people lost jobs in August 2003 than in the previous five months, but the unemployment rate declined. How can that make sense? Shouldn't it have increased?
    - The announcement speaks of "discouraged workers." Is the article trying to psychoanalyze those workers?
3. Tell students that to find the answers to these questions, they must become familiar with the Bureau of Labor Statistics and how it gathers data on employment and unemployment. Show students **Visual #2 – Measuring Employment: Some Basic Information,** and ask them the following questions to test their understanding.

Question #1
According to these definitions, are students unemployed?
Answer: No, they are not seeking jobs.

Question #2
Can students who work part-time while attending school be counted as employed?
Answer: Yes, students who work even one hour a week are considered employed and part of the labor force.

Question #3
Are all adults surveyed?
Answer: No, only a 60,000-household sample is used each month.

Question #4
Are retirees unemployed?
Answer: No, they are not seeking work.

Question #5
Is a worker considered unemployed if he or she is temporary laid off, but the company plans to rehire him or her in two weeks?
Answer: Yes, they are counted as unemployed.

4. Now that students understand how the BLS gets its data, tell students that they will turn their attention to discouraged workers and the declining unemployment rate mentioned in the *WSJ* announcement.
5. Hand out **Activity #1 – Calculating the Unemployment Rate,** and ask students to work together in groups of three to complete the worksheet.

Answers to Activity #1, Calculating the Unemployment Rate

Example #1–Year 2001
Employment rate = 99%, Unemployment Rate = 1%

Example #2–Year 2002
Employment rate = 98%, Unemployment Rate = 2%

Example #3–Year 2003
Employment rate = 98.99%, Unemployment Rate = 1.01%

Question:
Explain how the unemployment rate can decline in Example 3, with the same number of people out of work as in Example 2?
Answer: The unemployment rate can decline if workers become discouraged and stop seeking employment. At that point, the workers are no longer counted as unemployed workers, or as part of the labor force.

6. Explain that economists recognize the confusion that arises from the unemployment rate data. Tell students that many economists use the employment/population ratio to explain unemployment in a less-confusing manner. Show them **Visual #3 – The Employment/Population Ratio: An Alternative Measure.** Explain that this ratio is less subjective in its criteria, and tends to decline or increase in the same pattern as the rest of the economy.

7. Congratulate the students. Tell them they now know more about employment and unemployment than most citizens. Explain that the *WSJ* article should make more sense now. Tell them, just for fun, you want to give them a True/False verbal test to see how well they compare to typical adults on this issue. Show them **Visual #4 – Popular Conceptions about Unemployment Statistics,** and ask students for their answers.

Answers to Visual #4, Popular Conceptions about Unemployment Statistics

1. Unemployment statistics are found by doing a household and employer payroll survey each month.
2. These workers must actively seek work, or they will not be counted as unemployed.
3. There are always some workers losing jobs and some workers gaining jobs in the economy. The unemployment rate will rise only if the number of workers losing jobs and seeking jobs increases faster than the number of workers gaining jobs during the month.
4. Many adults are not in the labor force because they are discouraged workers, retired, institutionalized, or stay-at-home parents. Only about 60-63% of adults are part of the labor force.

Closure

Ask students to explain the main points of this investigation on unemployment.

- How can the unemployment rate decline, while the number of employed workers also declines?
- Why is the Employment/Population Ratio a useful tool?

Answer:

- The unemployment rate can decline if workers become discouraged and stop seeking employment. At that point, the workers are no longer counted as part of the labor force.
- The Employment/Population Ratio moves in the same direction as the economy, and is not influenced by workers who become discouraged in their search for a job. The ratio declines when job losses increase. It increases when workers gain jobs.

ANSWER KEY

Multiple Choice (3)
(*Answers are shown in bold.)*

1. The Department of Labor classifies which of the following workers as unemployed?
   a. A teacher visiting U.S. national parks during summer vacation.
   b. A high school student working 15 hours a week at a fast-food restaurant.
   c. A mechanical engineer who was laid off by an engineering firm and who is looking for work in the wine industry.
   d. A heavy machinery operator who was laid off by a logging company, who is not expecting to be recalled, and who is not looking for work.

2. How does the Department of Labor gather evidence to determine the unemployment rate?
   a. Surveys and interviews a small sample of households each month.
   b. Surveys and interviews most adults in the United States each month.
   c. Surveys and interviews employers about layoffs each month.
   d. Calculates the number of people being paid unemployment compensation payments each month.

3. The unemployment rate understates the incidence of people out of work in the economy when which of the following occurs?
   a. Workers get discouraged and stop looking for jobs.
   b. More people actively look for jobs.
   c. More immigrants come to the United States to find work.
   d. The birth rate declines.

ANSWER KEY

Essay (2)

1. Use your knowledge of unemployment and its calculation to respond to the following statement:

   "I don't understand why the unemployment rate in the United States is not zero. If the government would stop paying unemployment compensation payments to unemployed people, there would be no one to count as unemployed."

   Answer: The unemployment rate is calculated by dividing the number of unemployed people by the labor force. The number of employed and unemployed people is determined by household surveys. The number of people receiving unemployment compensation is irrelevant to determining the unemployment rate.

2. Explain how the number of worker layoffs can increase at the same time the unemployment rate stays constant.

   Answer: People laid off may become discouraged. People must be looking for work to be counted as unemployed. Discouraged workers are no longer looking for work, so the size of the labor force falls. This contributes to the unemployment rate remaining stable.

ANSWER KEY

Open-Ended Assessment (2)
(The employment/population ratio declined in 2001 and again in 2003, as the economy fell into a recession in 2001 and recovered very slowly into 2003. The E/P ratio is a sensitive measure of how workers were affected by this recession. The impact of the recession is more obvious in this measurement than it is in the unemployment rate statistics.)

1. Ask students to look at the BLS information in **Visual #3, The Employment/ Population Ratio: An Alternative Measure,** and suggest why the ratio declined in 2001 and 2003. Ask them to gather information about the Employment/Population Ratio. Access this data at www.bls.gov/cps/home.htm, and then click on "Employment/Population Ratio," which is on the right-hand side of the page in the "Latest Numbers" box. Ask students to compare this information with the unemployment rate data. Then let them decide which is the better measure of employment and unemployment.

   Note to the Teacher: Don't let students get too fond of the Employment/ Population Ratio measure. It has serious problems, particularly as it counts all part-time employees, voluntary or not, as employed. It is wise to let students know that any single measure of unemployment is, at best, a hint of what is really going on in the labor market. Most economists use several measures before drawing a firm conclusion.

2. As an alternative exercise, have students plot out the relative size of the labor force against the real Gross Domestic Product (GDP). This research likely will show a procyclical effect: The labor force shrinks when the real GDP shrinks because job seekers get discouraged during recessions.

   The labor force participation rate = $\frac{\text{(total employed) + (unemployed)}}{\text{population over 16 years of age}}$

Multiple Choice (3)

1. According to the Department of Labor, which of the following workers is considered unemployed?
   a. A teacher visiting U.S. national parks during summer vacation.
   b. A high school student working 15 hours a week at a fast-food restaurant.
   c. A mechanical engineer who was laid off by an engineering firm, and who is looking for work in the wine industry
   d. A heavy machinery operator who was laid off by a logging company, who is not expecting to be recalled, and who is not looking for work

2. How does the Department of Labor gather evidence to determine the unemployment rate?
   a. Surveys and interviews a small sample of households each month.
   b. Surveys and interviews most adults in the United States each month.
   c. Surveys and interviews employers about layoffs each month.
   d. Calculates the number of people being paid unemployment compensation payments each month.

3. The unemployment rate understates the incidence of people out of work in an economy when which of the following occurs?
   a. Workers get discouraged and stop looking for jobs.
   b. More people actively look for jobs.
   c. More immigrants come to the United States to find work.
   d. The birth rate declines.

Essay (2)

1. Use your knowledge of unemployment and its calculation to respond to the following statement:

   "I don't understand why the unemployment rate in the United States is not zero. If the government would stop paying unemployment compensation payments to unemployed people, there would be no one to count as unemployed."

2. Explain how the number of worker layoffs can increase at the same time the unemployment rate stays constant.

Open-Ended Assessment (2)

Directions: *Choose one of the following activities, find the correct statistical information from the government sources listed, display the statistics on the board or a large piece of paper, and write 1-3 sentences summarizing your findings.*

1. Look at the Bureau of Labor Statistics information in **Visual #3, The Employment/Population Ratio: An Alternative Measure,** and explain why the ratio declined in 2001 and 2003. Access this information at **www.bls.gov/cps/home.htm**, and then click on "Employment/Population Ratio," which is on the right-hand side of the page in the "Latest Numbers" box. Decide which is the better measure of employment and unemployment.

2. As an alternative exercise, plot the relative size of the labor force against the real Gross Domestic Product (GDP). Use the Economic Report of the President at www.access.gpp/eop/ to find information on the Real GDP.

News Alert from the Wall Street Journal

September 5, 2003

Employers cut jobs for the seventh consecutive month in August, despite a brightening economic outlook. Nonfarm business payrolls declined by 93,000, raising the total of job losses since the start of the year to 431,000. The job cuts were the deepest in five months. **Still**, the unemployment rate **fell** a tenth of a percentage point to 6.1% as more discouraged workers dropped out of the labor force.

Measuring Employment: Some Basic Information

The Bureau of Labor Statistics (BLS):

The government agency that tracks the number of people employed and unemployed.

Each month the BLS conducts a survey sample of 60,000 households, which reflects the characteristics of the United States population.

Professional interviewers survey people in the households, and the results are projected to represent all households in the United States. The BLS website is www.bls.gov.

Employed Workers:

People aged 16 years or older who are not institutionalized, and who worked at a job during the week the BLS conducted its survey, even if it was only for 1 hour.

Unemployed Workers:

People aged 16 years or older who are not institutionalized, who do not have a job, are available for work, and have actively looked for work in the last four weeks.

Labor Force:

The total of all employed and unemployed people.

Discouraged Workers:

People aged 16 years or older who are not institutionalized, who do not have a job, and who are not actively seeking a job because they think the search will not result in a job.

The Employment/Population Ratio: An Alternative Measure

The Employment/Population Ratio is found by dividing the number of employed workers by the adult population of the United States and multiplying by 100. The results are always expressed as a percentage.

$$\frac{\text{Employed Workers}}{\text{U.S. Adult Population}} \times 100$$

- This number is helpful to economists because it rises when the economy grows and shrinks when the economy slips into recession.

Notice how the numbers from Activity #1 are clearer when the Employment/Population Ratio is used to observe employment changes, rather than just calculating the unemployment rate.

Example #1–Year 2001

Population = 200,000
Labor Force = 100,000
Employed = 99,000
Unemployed = 1,000

Employment/
Population Ratio = $\frac{99,000}{200,000} \times 100 = 49.5\%$

Versus

Unemployment Rate = $\frac{1,000}{100,000} \times 100 = 1\%$

Example #2–Year 2002

Population = 200,000
Labor Force = 100,000
Employed = 98,000
Unemployed = 2,000

Employment/
Population Ratio = $\frac{98,000}{200,000} \times 100 = 49\%$

Versus

Unemployment Rate = $\frac{2,000}{100,000} \times 100 = 2\%$

Example #3–Year 2003

Population = 200,000
Labor Force = 99,000
Employed = 98,000
Unemployed = 1,000
Discouraged = 1,000

Employment/
Population Ratio = $\frac{98,000}{200,000} \times 100 = 49\%$

Versus

Unemployment Rate = $\frac{1,000}{99,000} = 1\%$

Popular Misconceptions about Unemployment Statistics

Directions: Answer each of these questions true or false. Then compare your answers with the information learned in this investigation.

1. Unemployment statistics are found by counting the number of people filing for unemployment compensation payments.

2. Adults 16 years of age or older are counted as unemployed if they have lost their job.

3. The unemployment rate will increase whenever workers are losing jobs.

4. Most adults (80-85%) are in the labor force.

Calculating the Unemployment Rate

Directions: In this activity, you are asked to use some hypothetical numbers to calculate the unemployment rate. There are three different examples. Watch carefully to see how "discouraged" workers (i.e., those no longer actively seeking work) can change the results.

Remember the following definitions as you calculate the unemployment rate in each example:

- **The population** is the number of adult people who could be employed in the economy.
- **The labor force** is equal to the unemployed workers plus the employed workers.
- **The employment rate** is equal to the number of employed workers divided by the labor force and multiplied by 100. Your answer is always stated as a percentage.
- **The unemployment rate** is equal to the number of unemployed workers divided by the labor force and multiplied by 100. Your answer is always stated as a percentage.

Example #1–Year 2001

Population = 200,000 non-institutionalized adults, 16 years and older
Labor Force = 100,000
Employed = 99,000
Unemployed = 1,000

Question #1: What is the employment rate?

Question #2: What is the unemployment rate?

Example #2–Year 2002

Population = 200,000 non-institutionalized adults, 16 years and older
Labor Force = 100,000
Employed = 98,000
Unemployed = 2,000

Question #1: What is the employment rate?

Question #2: What is the unemployment rate?

Example #3–Year 2003

Population = 200,000 non-institutionalized adults, 16 years and older
Labor Force = 99,000
Employed = 98,000
Unemployed = 1,000
Discouraged = 1,000

Question #1: What is the employment rate?

Question #2: What is the unemployment rate?

Question #3: Explain how the unemployment rate can decline in Example #3 with the same number of people out of work as in Example #2.