

AN ECONOMIC EDUCATION NEWSLETTER

INTERSECTIONS

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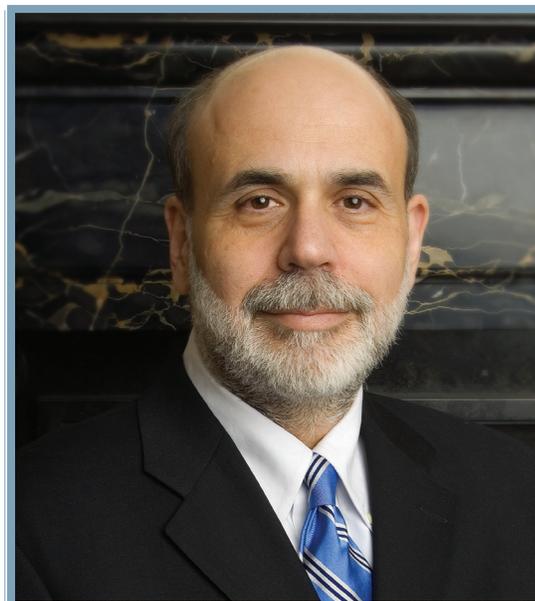
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Federal Reserve System Welcomes a New Chairman

Ben S. Bernanke was sworn in on February 1, 2006, as Chairman of the Board of Governors of the Federal Reserve System. Chairman Bernanke replaces Alan Greenspan, whose term as Federal Reserve Chairman ended on January 31, 2006, after more than 18 years in the post. Chairman Bernanke also serves as Chairman of the Federal Open Market Committee (FOMC), the Federal Reserve System's principal monetary policymaking body.

The seven members of the Board of Governors of the Federal Reserve System are nominated by the President and confirmed by the Senate. The Chairman and Vice Chairman of the Board are nominated by the President from among the members of the Board of Governors and confirmed by the Senate. Chairman Bernanke's 14-year term as a Governor of the Federal Reserve System expires January 31, 2020, and his four-year term as Chairman expires January 31, 2010.

Before his appointment as Chairman of the Federal Reserve System, Bernanke was chairman of the President's Council of Economic Advisers, from June 2005 to January 2006. He served as a Governor of the Federal Reserve System from 2002 to 2005 and was a visiting scholar at the Federal Reserve Bank of Philadelphia from 1987 to 1989. From 1985 to 2002, Chairman Bernanke was an economics professor at Princeton University.



Chairman Bernanke has published many articles on a wide variety of economic issues, including monetary policy and macroeconomics, and he is the author of several scholarly books and two textbooks. He served as the director of the monetary economics program at the National Bureau of Economic Research (NBER) and as a member of the NBER's Business Cycle Dating Committee. Chairman Bernanke's work with civic and professional groups includes two terms as a member of the Montgomery Township (NJ) Board of Education.

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Opportunity Cost, Scarcity, and Choice

Almost every undergraduate introductory economics course begins the same way: with the definition of economics. Economics is the study of how people use scarce resources to satisfy unlimited wants. At the core of economics is the idea that our world is a place plagued with scarcity — that is, we do not have all the resources we want. As a result, we must make choices. When we make a choice, that choice necessarily means that we have to give up something. The something we give up is called opportunity cost. Economists define opportunity cost as the next best alternative or the highest valued alternative to the choice that was made. If we choose to produce a good using a resource, the opportunity cost of producing that good is the highest valued alternative use of that resource.

Why is it important to teach students about opportunity cost, scarcity, and choice in the K-12 classroom?

These concepts can be thought of as the core of capable decision-making. If we teach our students, beginning at an early age, the critical thinking skills to analyze problems and make informed decisions about their use of time and money, they are likely to be better students, save more over their lifetimes, and choose life paths that result in higher standards of living. As schools look to teach their students more about personal finance topics such as budgeting and saving, equipping students with a strong understanding of opportunity cost, scarcity, and choice is essential.

Teaching these concepts from an early age — as a progression from kindergarten through senior year in high school — is important. In the lowest grades, students can identify two alternatives, the choice they would make between them, and the opportunity cost of their decision. In upper elementary school, students can use the PACED decision-making model to

decide between more than two alternatives. In the PACED model, students learn to identify the problem (P) or decision they have to make, list the alternatives (A) available to them, identify a set of criteria (C) they can use to evaluate the different alternatives, evaluate (E) the alternatives based on the criteria, and make a decision (D) between the alternatives. The students are then asked to identify the

opportunity cost — the next best alternative — of the choice they made.

By middle and high school, students should be able to identify more complex opportunity cost problems and make use of a production possibilities curve to show how production in a two-good economy is allocated. Discussions of opportunity cost in the high school classroom can be used to address pressing current events. For example, you might ask your students to assess this situation: driving five miles to a gas station that sells gasoline for 5 cents cheaper or going to the gas station around the corner. They can discuss how to identify the opportunity cost associated with buying the cheaper gas. When looking at environmental issues, you can ask your students to research municipal recycling programs and identify the opportunity cost associated with a town's adopting a mandatory recycling program.

The connections with personal finance issues are some of the most important contexts in which students can use opportunity cost. Teaching middle and high school students to budget and make realistic spending decisions are important. Doing so also lends itself well to discussions of opportunity cost and choice. Most household budgets require individuals and the household to make tradeoffs between different things on which to spend household income. With sound decision-making skills that are well grounded in the concept of opportunity cost, our young people can be expected to make more thoughtful budget decisions as they go off to college and the world of work.

— Andrew T. Hill, Ph.D.

KEY DEFINITIONS

Economics — The study of how individuals and society make decisions about how to use scarce resources to satisfy their unlimited material wants.

Scarcity — The condition that exists when there are not enough resources to satisfy all of the wants of individuals or society.

Choices — The decisions individuals and society make about the use of scarce resources.

Opportunity Cost — The next highest valued alternative that is given up when a choice is made.

PACED Decision-Making Model

The PACED decision-making model uses a five-step process and a grid to guide the decision-making process. In primary grades, students can use + and – or 0 and 1 in the grid to indicate whether an alternative does or does not meet each of the criteria. The answers are then summed for each alternative and a decision is made. In later grades, a numbered scale (e.g., 0 to 3) could be used to indicate how well each alternative meets the criteria. After summing the results, the students indicate the choice they would make and then identify the opportunity cost of their decision.

Steps in the PACED Model:

P = Identify the problem or decision that needs to be made.

A = List the alternatives available.

C = Identify a set of criteria that can be used to evaluate the different alternatives.

E = Evaluate the alternatives based on the criteria using + and –, 0 and 1, or a numbered scale.

D = Make a decision, based on the evaluation, between the different alternatives.

Sample PACED Decision-Making Grid:

		CRITERIA				TOTAL
ALTERNATIVES						

Applicable Academic Standards

Voluntary National Content Standards in Economics: Standard 1

Students will understand that productive resources are limited. Therefore, people cannot have all the goods and services they want. As a result, they must choose some things and give up others.

Delaware Social Studies Curriculum Framework: Economics Standard 1

New Jersey Core Curriculum Content Standards for the Social Studies: Standard 6.5

Pennsylvania Academic Standards for Economics: Standards 6.3.3, 6.3.6, 6.3.9, 6.3.12

Here are some additional resources related to opportunity cost, scarcity, and choice:

- Michael Munger, chair of political science at Duke University, in his online article “A Fable of the OC,” published at the Library of Economics and Liberty, provides some fascinating insights into opportunity cost.

Munger, Michael. “The Fable of the OC,” Library of Economics and Liberty (2006). www.econlib.org/library/Columns/y2006/Mungeropportunitycost.html

- Russian economic educator Liudmila Guinkel has written an innovative high school lesson entitled “Scarcity and Choice.” Written in English and developed as part of the National Council on Economic Education’s Training of Writers program, Guinkel’s lesson provides an active-learning format for teaching about scarcity, opportunity cost, choice, and the production possibilities frontier. The lesson can be downloaded at www.ncee.net/ei/lessons/OldMac/lesson5/.

- The National Council on Economic Education offers a free sample lesson from its publication *Focus: Economics—Grades 3-5*. The “Back-to-School Scarcity” lesson for elementary school uses active-learning methodologies to engage students in using a decision-making grid to choose between alternatives. The lesson can be found online at www.ncee.net/resources/lessons/download.php?durl=focus35_lesson2.pdf.

Helping Students Succeed with Personal Financial Education

If you ask your students, “What do you want to become later in life?” they may answer, “Millionaires!” Few students can explain how they could become a millionaire, other than perhaps by winning the lottery. Since your students have a better chance of being struck by lightning *twice* than winning a million dollars through playing the lottery, it makes sense for all of them to learn practical steps toward financial success.

A student named Jane works part-time and earns income throughout the school year. If she learns how to save and invest a portion of her income while young, Jane can become a millionaire by the time she retires simply by continuing throughout her working life the saving and investing habit she developed when young.

Jane needs to have a good plan, though. Learning the economic and financial concepts of saving, investing, and compound interest will help Jane to better understand how she can be financially successful. “Keys to Your Financial Success,” a high school program promoted by the Federal Reserve Bank of Philadelphia, provides teachers with the training, lessons, and materials necessary to teach students how to be financially successful.

For example, if Jane saved \$100 per month (\$1,200 a year) for 50 years and invested her money and received a 9 percent return each year, she would have \$1,066,129 at the end of the 50 years (see the figure). That \$1,006,129 sum is the result of planning, patience, and compound interest. The scenario presented in the figure demonstrates the success a sound, long-term saving

and investing plan can produce. Lessons using scenarios just like this are included in the “Money Management” section of the “Keys” program.

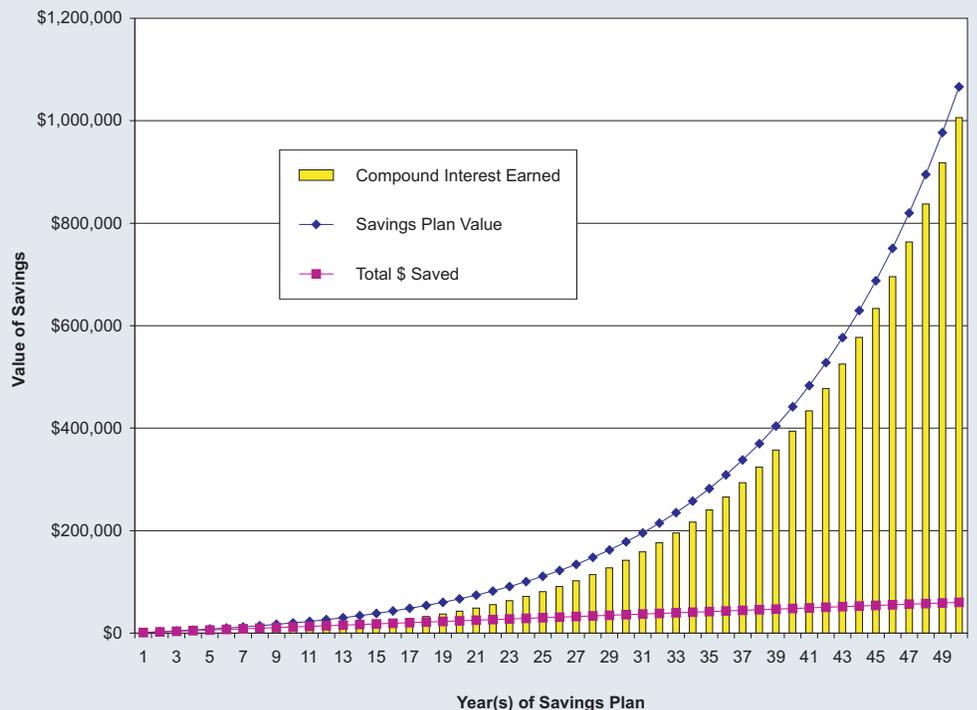
Jane might think that saving \$100 per month (\$1,200 a year) is impossible, but it can be done. For example, she could do the following to save enough money to retire as a millionaire. First, Jane could save a third of the needed money and live a healthier life by spending \$2 a day less on drinks and snacks at the vending machine. She could also ride the bus to and from work, thereby eliminating the purchase of one tank of gasoline each week. Finally, Jane, who smokes cigarettes, could give up her habit. This deci-

sion will save her money and lead to a healthier life with fewer medical costs.

Students taught the sort of steps Jane has taken can learn about other topics related to financial success, such as budgeting and reducing impulse spending. The Federal Reserve Bank of Philadelphia’s “Keys to Your Financial Success” program offers a high school a comprehensive financial education course that covers the concepts mentioned above. The “Keys” course includes five units: Setting Financial Goals and the Decision-Making Process; Career Planning – Investments in Human Capital; Money Management, including credit use; Consumer Skills; and Risk Protection.

FIGURE

Jane’s Savings Plan



\$1,200 deposited into the savings plan each year; \$60,000 deposited over 50 years.

Schools that commit to offering the course receive pre- and post-testing of “Keys” students, semiannual roundtable meetings for “Keys” teachers, and a one-week summer training program for the “Keys” teachers, all free of charge.

— Todd Zartman

If your school is looking to expand its course offerings or update an existing personal finance course, “Keys” could be a perfect fit for your school’s current curriculum. Pennsylvania and New Jersey schools interested in learning more about the “Keys to Financial Success” course should contact Todd Zartman

(todd.zartman@phil.frb.org) at 215-574-6457.

Interested high schools in Delaware should contact Barbara Emery (emeryb@lerner.udel.edu) at the University of Delaware Center for Economic Education and Entrepreneurship at 302-831-4622.

Rule of 72

The Rule of 72 is a simple formula that individuals can use to determine how long it takes for invested money to double. For example, if Jane invests \$100 in a bank account that earns 3 percent annually, that \$100 will double to \$200 in 24 years.

How did we get an answer of 24 years? Simply by dividing 72 by the interest rate, in this case 3. The answer, 24 years, tells the student the number of years it takes to double that initial investment.

$$72/3 \text{ (interest rate of savings instrument)} = 24 \text{ (time period in years)}$$

In contrast, if Jane invests \$100 in a bank account that earns 9 percent annually, that \$100 will double to \$200 in eight years. Jane’s money doubles much faster in the account that earns the higher interest rate.

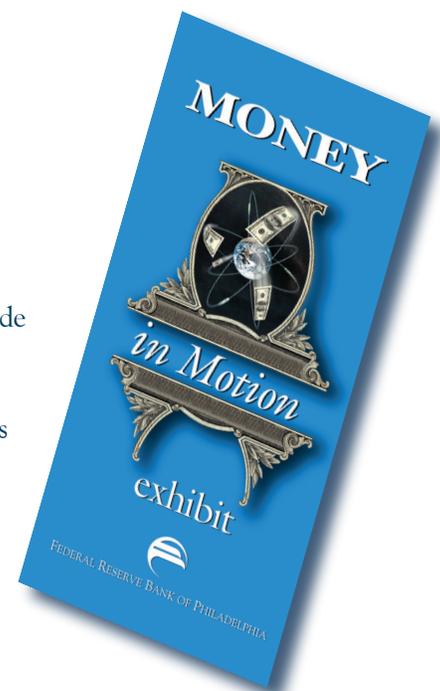
$$72/9 \text{ (interest rate of savings instrument)} = 8 \text{ (time period in years)}$$

This simple and easy-to-remember “rule” helps students understand how long it takes to double their money.

Federal Reserve Bank of Philadelphia Releases Lessons for Use with Classroom Visits to Its “Money in Motion” Exhibit

The Federal Reserve Bank of Philadelphia has released a set of six lessons that provide activities for teachers to use before, during, and after a visit to the “Money in Motion” exhibit. The six lessons, designed for different grade levels, cover topics such as the characteristics and functions of money, banking concepts, the purposes and functions of the Federal Reserve System, monetary policy, and personal finance. To download the lessons, view the virtual exhibit tour, and find out how to book a class visit to the “Money in Motion” exhibit, visit www.philadelphiafed.org/money_in_motion/groups.html.

Look for a comprehensive overview of the lessons, the exhibit, and how a class visit can fit into the K-12 curriculum in the Fall 2006 issue of *Intersections*.



Bulletin Board

If you want to learn more about these events, visit www.philadelphiafed.org/education.

Economics and Children's Literature

Registration Deadline: July 21, 2006

WHEN	WHERE
August 8, 2006 8:30 a.m. – 3:30 p.m.	Genetti Hotel and Suites 200 West Fourth Street, Williamsport, PA 17701
August 10, 2006 8:30 a.m. – 3:30 p.m.	Lehigh University Iacocca Hall, Bethlehem, PA 18015
August 16, 2006 8:30 a.m. – 3:30 p.m.	Federal Reserve Bank of Philadelphia 10 Independence Mall, Philadelphia, PA 19106

What: This one-day professional development program introduces elementary school educators to economics and personal finance concepts and demonstrates how to teach them using children's literature. Taught by Federal Reserve economic education specialists, this program emphasizes active- and collaborative-learning teaching methodologies that help elementary school educators meet state and national standards in personal finance and economics while teaching language arts.

Prerequisites & Requirements There are no prerequisites for this program. Open to grades K-6 educators.

Cost: There is a \$20 registration fee payable by credit card at time of registration. Your registration fee includes breakfast and lunch and a copy of SPEC Publishers' *Economics in Children's Literature* curriculum package. We accept MasterCard, Visa, and American Express. Registration fee is nonrefundable after the registration deadline.

Credit: Upon completion of the one-day program, teachers will receive professional development credit in their respective states.

Register Online: www.philadelphiafed.org/education (Note: Registration is online only.)

Personal Finance for the Middle School Classroom

Registration Deadline: July 21, 2006

WHEN	WHERE
August 9, 2006 8:30 a.m. – 3:30 p.m.	Genetti Hotel and Suites 200 West Fourth Street, Williamsport, PA 17701
August 11, 2006 8:30 a.m. – 3:30 p.m.	Lehigh University Iacocca Hall, Bethlehem, PA 18015
August 17, 2006 8:30 a.m. – 3:30 p.m.	Federal Reserve Bank of Philadelphia 10 Independence Mall, Philadelphia, PA 19106

What: This one-day professional development program introduces middle school educators to methods for teaching personal finance topics such as personal decision-making, saving, investing, budgeting, and the informed use of credit. Taught by Federal Reserve economic education specialists, this program emphasizes active- and collaborative-learning teaching methodologies that help middle school educators meet state and national standards in personal finance and economics.

Prerequisites & Requirements: There are no prerequisites for this program. Open to grades 6-8 educators.

Cost: There is a \$20 registration fee payable by credit card at time of registration. Your registration fee includes breakfast and lunch and a copy of the National Council on Economic Education's *Financial Fitness for Life, Grades 6-8* curriculum package. We accept MasterCard, Visa, and American Express. Registration fee is nonrefundable after the registration deadline.

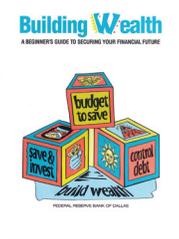
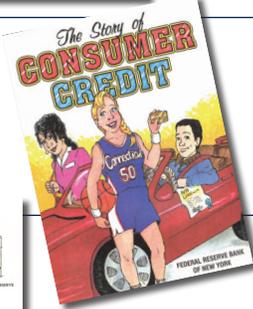
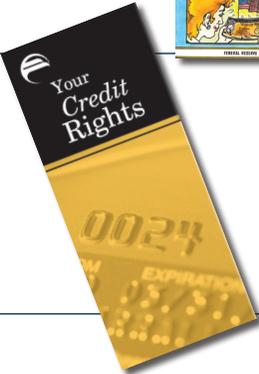
Credit: Upon completion of the one-day program, teachers will receive professional development credit in their respective states.

Register Online: www.philadelphiafed.org/education (Note: Registration is online only.)

For more information about these programs, contact:
Todd Zartman, Economic Education Analyst, Federal Reserve Bank of Philadelphia • todd.zartman@phil.frb.org

The Resource Rack

The Federal Reserve System has many publications and online resources available for classroom use. Most are available in classroom sets for free.

		<p>Building Wealth Offers introductory guidance to individuals and families seeking help to develop a plan for building personal wealth. It presents an overview of personal finance strategies. <i>Published by the Federal Reserve Bank of Dallas</i> Order at www.newyorkfed.org/publications</p>
		<p>Banking Basics Provides an introduction to banking for young people that answers many basic questions: What is a bank? What makes one type of account different from another? Why do banks fail and what happens when they do? <i>Published by the Federal Reserve Bank of Boston</i> Order at www.newyorkfed.org/publications</p>
		<p>The Story of Consumer Credit Explains consumer rights and consumer credit regulations. A great comic book format for the high school classroom. <i>Published by the Federal Reserve Bank of New York</i> Order at www.newyorkfed.org/publications</p>
		<p>The Story of Banks Follows three young entrepreneurs as they use progressively more sophisticated banking services over a 23-year period. Also explores the role of checking deposits and lending in the money creation process. A great comic book format for the middle or high school classroom. <i>Published by the Federal Reserve Bank of New York</i> Order at www.newyorkfed.org/publications</p>
		<p>A Penny Saved Illustrates the importance and benefits of savings and the various types of savings instruments and institutions. A great comic book format for the middle or high school classroom. <i>Published by the Federal Reserve Bank of New York</i> Order at www.newyorkfed.org/publications</p>
		<p>Credit Brochures Provide information about important issues related to the use of credit. The publications in this series are “Applying for Credit and Charge Cards,” “How to Establish, Use, and Protect Credit,” “What Your Credit Report Says About You,” “Your Credit Rating,” and “Your Credit Rights.” These brochures are an excellent resource for use in the high school classroom. <i>Published by the Federal Reserve Bank of Philadelphia</i> Order at www.newyorkfed.org/publications</p>
		<p>FederalReserveEducation.org FederalReserveEducation.org is the Federal Reserve System’s portal to economic and personal financial education materials on the web. From the portal, teachers and students can link to print and online resources offered by the 12 Reserve Banks and the Board of Governors. <i>Created by the Federal Reserve System</i> Available at: www.federalreserveeducation.org</p>

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Todd Zartman, Economic Education Analyst
Community Affairs Department
Federal Reserve Bank of Philadelphia
10 Independence Mall
Philadelphia, PA 19106

Or you can e-mail your changes to todd.zartman@phil.frb.org. Be sure to include all details of the names and addresses you would like to have changed on our list.

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