Building Your Future

A Student and Teacher Resource for Financial Literacy Education

Sponsored by:

New York Life Foundation

About This Book

Personal finance is part knowledge and part skill – and the *Building Your Future* book series gives students a foundation in both. It addresses knowledge by covering the essential principles of banking in Book One, financing in Book Two and investing in Book Three. The series also addresses the mathematical skills that students need to live a financially healthy life. Students will be able to see the real-world consequences of mastering their finances, which helps them understand the relevance of good mathematical skills. We hope you enjoy this *Building Your Future* book series.

The catalyst for this book series was based on an original book authored and donated to The Actuarial Foundation by an actuary, James A. Tilley, FSA, who was interested in financial literacy education in schools. We thank Mr. Tilley for his original works that inspired this *Building Your Future* series.

About The Actuarial Foundation

The Actuarial Foundation, a 501(c)(3) nonprofit organization, develops, funds and executes education and research programs that serve the public by harnessing the talents of actuaries. Through *Advancing Student Achievement*, a program that seeks to improve and enhance student math education in classrooms across the country, we are proud to add *Building Your Future*, a financial literacy education curriculum for teachers and students, to our library of math resources. Please visit the Foundation's Web site at: www.actuarialfoundation.org for additional educational materials.

What is an Actuary? Actuaries are the leading professionals in finding ways to manage risk. It takes a combination of strong math and analytical skills, business knowledge and understanding of human behavior to design and manage programs that control risk. "Actuary" was included as one of the Best Careers of 2007 in US News and World Report. To learn more about the profession, go to: www.BeAnActuary.org.

The Actuarial Foundation would like to gratefully acknowledge the New York Life Foundation as the primary sponsor of the *Building Your Future* series. Without their support, this resource would not have been possible.

About New York Life Foundation

The New York Life Foundation is the major vehicle through which New York Life Insurance Company channels contributions to national and local nonprofit organizations. Through its *Nurturing the Children* initiative, the Foundation supports organizations, programs and services that target young people, particularly in the areas of mentoring, safe places to learn and grow, educational enhancement opportunities and childhood bereavement. Since 1979, the New York Life Foundation has donated more than $110 million to national and local nonprofit organizations. Please visit the New York Life Foundation's Web site at: www.newyorklifefoundation.org.

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Appendices

Some of the activities in this book reference specific Web pages. While active at the time of publication, it is possible that some of these Online Resource links may be renamed or removed by their hosts at some point in the future. Note that these links were provided simply as a convenience; a quick search should reveal some of the many other online resources that can be used to complete these activities. Facts and opinions contained are the sole responsibility of the organizations expressing them and should not be attributed to The Actuarial Foundation and/or its sponsor(s).

Teacher's Guide

Chapter 1: Bonds

Looking Ahead

One way to increase the amount of interest earned on one's money is by "lending" money to the government or a business in the form of a bond purchase. Government and corporate bonds offer people the opportunity to invest in a variety of ways that can generate profits while providing a great deal of security.

Getting Organized

- Students will need approximately one class period to complete the activities for this lesson.
- While the use of individual computers with spreadsheet software (such as Excel) best facilitates the activities in the lesson, activities can be completed by hand as well.
- Make a copy of the **Bonds: Independent Practice Handout** for each student.

Learning Objectives

As students learn about bonds, they will:

- Discuss the key terms associated with bonds
- Practice calculating the fair market value of bonds
- Apply the principles of discount factor and present value to bond scenarios
- Calculate the yield on various bond scenarios and create and use spreadsheets for the same purpose
- Apply spreadsheets and computation skills to find the correct answers to questions related to investing in bonds
- Draw conclusions about when bonds are a good/appropriate investment in terms of one's personal savings goals

Standards

JumpStart:

- Apply reliable information and systematic decision making to personal financial decisions
  Standard 2: Find and evaluate financial information from a variety of sources
  Standard 4: Make financial decisions by systematically considering alternatives and consequences
- Implement a diversified investment strategy that is compatible with personal goals
  Standard 3: Evaluate investment alternatives
  Standard 4: Describe how to buy and sell investments

NCTM:

- Understand meanings of operations and how they relate to one another
- Compute fluently and make reasonable estimates
- Use mathematical models to represent and understand quantitative relationships
- Analyze change in various contexts
- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Develop and evaluate inferences and predictions that are based on data

Key Terms

- **Bond:** a loan made by an investor to a government or company with the promise that the principal amount borrowed will be repaid, usually with interest, at a specific time, usually a year or more in the future
- **Issuer:** the government or company that borrows the money
- **Holder:** the person or company who purchases the bond
- **Coupons:** interest payments made by the bond issuer to the bond holder
- **Certificates**: documents issued by a government or company that include the name of the issuer, the interest rate and the bond's maturity date
- **Face amount:** the amount of money borrowed by the issuer
- **Coupon rate:** the annual percentage interest rate paid on the bond
- **Maturity Date:** date by which the issuer must repay the principal amount borrowed
- **Price:** amount the investor must pay for the bond
- **Cost of funds:** the interest rate that the issuer must pay on the bond
- **Fair market price:** the price that a reasonable investor would expect to pay for the bond
- **Yield to maturity:** the market rate of interest on the bond
- **Fluctuations:** changes in the value of bonds

Teaching Strategies

1. Introduce bonds as a safe way to earn interest on an investment.
    - Ask: *Besides a savings account, where can you invest your money for a significant period of time and earn a guaranteed rate of interest?*
    - Brainstorm possible answers as a class and use the question as a means for introducing students to the concept of bonds.

2. Practice activities throughout the chapter are cumulative and will assist students with the completion of the Independent Practice assignment. You can facilitate these activities using a computer and projector, with students at individual computers, or longhand on the board or overhead.

3. Direct students to complete the **Bonds: Independent Practice Handout**. Provide students with time to work individually, in pairs or in small groups to complete the activity. Discuss answers as a group and encourage students to share their opinions about bonds as an overall investment strategy. See **Bonds: Independent Practice Answer Key**.

4. To extend student learning, invite a securities broker into the classroom to discuss how bonds can be selected as investments and common mistakes people make when investing in the bond market. After the discussion, provide students with time to investigate various government and corporate bond choices. Have students select one government bond and one corporate bond for purchase based on what they learned from the speaker. Have students write one or two paragraphs about why they selected each bond.

Assessment Recommendations

1. Students could be assigned participation/completion grades for the "Examples and Practice" activities.

2. Students should receive individual grades for the **Bonds: Independent Practice Handout**. These could be completion grades, accuracy grades or a combination of both based on teacher discretion.

3. Assess participation, completion and/or accuracy grades for the extended student learning activity in step 4, under Teaching Strategies.

Bonds: Independent Practice Handout

Name ____ Date ______________

Directions: Use what you have learned from this chapter to compute the answers for each question below. Be prepared to discuss your answers.

Bond Table

- Assume that loved ones have purchased a bond for you on your birthday each year for five years.
- The table below shows the year each bond was purchased, the face amount of the bond, the coupon rate, and the maturity date.
- Use a spreadsheet to compute the total amount of interest on each bond.

Face Amount of Bond	Date of Purchase	Coupon Rate	Maturity Date	Total Interest Earned
$5,000	5/30/2000	7.50%	5/30/2010	
$1,000	5/30/2001	6.80%	5/30/2011	
$5,000	5/30/2002	5.00%	5/30/2012	
$10,000	5/30/2003	6.50%	5/30/2008	
$1,000	5/30/2004	7.00%	5/30/2009	
			Total Interest	

1. What will be the total amount of interest earned on all of the bonds together?

2. If you wanted to purchase a new bond like the one you received in 2002, how much would it cost?

3. Using the coupon rates on the calendar, what can you assume about the price of bonds purchased in 2001 vs. those purchased in 2002? Explain.

4. Which bond has the highest yield to maturity? Why?

5. Based on what you have learned about bonds, do you think you would consider them as an investment choice? Why?

Bonds: Independent Practice Answer Key

Directions: Use what you have learned from this chapter to compute the answers for each question below. Be prepared to discuss your answers.

Bond Table

- Assume that loved ones have purchased a bond for you on your birthday each year for five years.
- The table below shows the year each bond was purchased, the face amount of the bond, the coupon rate, and the maturity date.
- Use a spreadsheet to compute the total amount of interest on each bond.

Face Amount of Bond	Date of Purchase	Coupon Rate	Maturity Date	Total Interest Earned
$5,000	5/30/2000	7.50%	5/30/2010	$3,562
$1,000	5/30/2001	6.80%	5/30/2011	$646
$5,000	5/30/2002	5.00%	5/30/2012	$2,375
$10,000	5/30/2003	6.50%	5/30/2008	$2,925
$1,000	5/30/2004	7.00%	5/30/2009	$315
			Total Interest	$9,823

1. What will be the total amount of interest earned on all of the bonds together?

   $9,823 (add all of the total interest earned from the table above)

2. If you wanted to purchase a new bond like the one you received in 2002, how much would it cost?

   Answers will vary based on the year—use of a spreadsheet like the last two examples provided in the student chapter will produce the correct answer.

3. Using the coupon rates on the calendar, what can you assume about the price of bonds purchased in 2001 vs. those purchased in 2002? Explain.

   The interest rate went down, so the price of bonds most likely went up since the two are inversely related.

4. Which bond has the highest yield to maturity? Why?

   The bond purchased in 2000 because while it did not have the highest face value, it did have the highest rate of interest and was held twice as long as the $10,000 bond.

5. Based on what you have learned about bonds, do you think you would consider them as an investment choice? Why? *Answers will vary.*

Teacher's Guide

Chapter 2: Stocks

Looking Ahead

The stock market offers investors the opportunity to purchase a small piece of a company in exchange for incurring the risk of making or losing money on that investment. Using data related to specific companies and industries, as well as stock price trends, students will learn the risks and benefits of investing in the stock market.

Getting Organized

- Students will need approximately one class period to complete the activities for this lesson.
- While the use of individual computers with spreadsheet software (such as Excel) best facilitates the activities in the lesson, activities can be completed as a pencil/paper task as well.
- Make a copy of the **Stocks: Independent Practice Handout** for each student.
- Students will need approximately one class period for the follow-up activities related to the Independent Practice assignment.

Learning Objectives

As students learn about the basics about stocks, they will:

- Discuss the key terms associated with stocks
- Review the step-by-step process for purchasing stock through a securities firm
- Read and analyze data related to the various market indices and stock symbols
- Learn about the costs associated with investing in the stock market and ways to minimize these costs

Standards

JumpStart:

- Apply reliable information and systematic decision making to personal financial decisions
  Standard 2: Find and evaluate financial information from a variety of sources
  Standard 4: Make financial decisions by systematically considering alternatives and consequences
- Implement a diversified investment strategy that is compatible with personal goals
  Standard 3: Evaluate investment alternatives
  Standard 4: Describe how to buy and sell investments

NCTM:

- Understand meanings of operations and how they relate to one another
- Compute fluently and make reasonable estimates
- Use mathematical models to represent and understand quantitative relationships
- Analyze change in various contexts
- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Develop and evaluate inferences and predictions that are based on data

Learning Objectives (continued)

- Calculate stock dividends, returns and market value
- Calculate gains and losses on stocks
- Research stocks and use their findings to make decisions about which stocks should be purchased
- Track stock purchases and draw conclusions about their investment strategies and their effectiveness

Key Terms

- **Stock:** ownership in a corporation
- **Share:** a unit of stock owned by an investor
- **Shareholder:** a person who owns one or more shares of stock
- **Portfolio:** collection of investments owned by an investor
- **Dividend:** amount of money an investor is paid for each share of stock owned in a company
- **Annual Return**: the increase in an investment's value expressed as a percentage per year
- **Depreciation:** a non-cash expense that reduces the value of a company's assets
- **Total annual return:** annual gains and losses divided by the cost of the investment; expressed as a percentage
- **Exchanges:** organizations established for the purpose of arranging the buying and selling of various companies' stocks
- **Specialist:** an employee responsible for recording all of the people who want to buy or sell a particular company's stock
- **Buy limit order:** the highest price at which an investor will purchase a specific stock
- **Sell limit order:** the lowest price at which an investor will sell a specific stock
- **Market order:** a buyer or seller agrees to purchase or sell at whatever price is available in the market
- **Stockbroker:** employee of a securities firm to whom orders to buy or sell stock are communicated
- **Securities firm:** a company where an account is maintained for the purpose of buying and selling stocks
- **Floor broker:** works on the stock exchange floor and communicates buy and sell directions with the specialist
- **Transaction cost:** fee paid to stockbroker for each trade he or she makes
- **Online trading:** using the Internet to buy and sell stocks
- **Last price:** the price of a specific stock at the time the market closes
- **Market value:** the last reported sale price or current bid/asking price for a particular stock
- **Annual dividend yield:** the sum of the quarterly dividends paid for the year divided by the price per share on a particular stock
- **Stock price index:** a measure of stock market performance

Teaching Strategies

1. Introduce the idea of investing in the stock market. Ask: *Do you think a person has to be a gambler or a risk-taker to invest in the stock market? Why?*

   Direct students who respond with a "yes" to one side of the room while those responding with a "no" go to the opposite side of the room. If any students answer "maybe," direct them to another area of the classroom. Provide students with 2-3 minutes to work as a group to brainstorm the reasons for their answer. Select a representative from each group to explain why the group members answered the way they did. Record ideas on the board/overhead for later use.

2. Practice activities throughout the chapter are cumulative and will assist students with the completion of the Independent Practice assignment. You can facilitate these activities using a computer and projector, with students at individual computers, or longhand on the board or overhead.

3. Ask the opening question again, and poll students to see how many changed their response based on what they learned after working through the chapter. Discuss specific ideas/concepts that changed students' responses to the question.

4. Direct students to complete the **Stocks: Independent Practice Handout**. Provide students with time to work individually to begin the project.

5. After completing the Independent Practice assignment, allow students one class period to present their findings. Be sure to discuss the follow-up questions as a class.

6. To extend student learning, have students work in small groups to research topics related to investing in the stock market such as stock market crashes, day trading, penny stocks, cyclical market trends, unorthodox investing strategies, etc. Each group should present their findings by creating a short lesson, game, or interactive activity that would teach their classmates about the topic they researched.

Assessment Recommendations

1. Students could be assigned participation/completion grades for doing the in-class activities and the "Examples and Practice" activities.

2. Students should receive individual grades for their completion of the **Stocks: Independent Practice Handout**. These could be completion grades, accuracy grades or a combination of both based on teacher discretion.

3. Assign completion and accuracy grades for the extended student learning activity in step 6, above.

Examples and Practice: Answer Key

Examples and Practice, p. 10

Company Ownership Spreadsheet				
	A	B	C	D
1	**Owner**	**Shares Purchased**	**Percentage of Ownership**	**Value of Shares**
2	You	5	25%	$250.00
3	Friend 1	3	15%	$150.00
4	Friend 2	6	30%	$300.00
5	Friend 3	4	20%	$200.00
6	Friend 4	2	10%	$100.00
7		**20**		
8	Total		**100%**	**$1,000.00**

Examples and Practice, p. 11

Company Ownership Spreadsheet				
	A	B	C	D
1	**Owner**	**Shares Purchased**	**Percentage of Ownership**	**Value of Shares**
2	You	7	35%	$350.00
3	Friend 1	5	25%	$250.00
4	Friend 2	4	20%	$200.00
5	Friend 4	4	20%	$200.00
6		**20**		
7	Total		**100%**	**$1,000.00**

Examples and Practice, p. 12

- How much does each stockholder earn in weekly dividends? *As stated, total profit per week is $480. Profit per share is $24 ($480/20 shares); multiply each shareholder's number of shares by $24.*
- How much would each stockholder earn on a monthly basis? *Multiply each shareholder's weekly earnings by four.*
- What would happen if the profits on each lawn decreased to $25 per lawn? Calculate the new amount each shareholder would earn. *New weekly profit is $375; weekly profit per share becomes $18.75. Multiply this by the number of shares each stockholder owns.*
- What would happen if the number of lawns increased to 20 and the profit remained at $25 per lawn? Calculate the amount each shareholder would earn. *New weekly profit is $500; weekly profit per share becomes $25. Multiply this by the number of shares each stockholder owns.*

Stocks: Independent Practice Handout

Name ____ Date _________________

Scenario: You have received a $1,000 inheritance that you must use to purchase stock and nothing else. You must keep the stock for a minimum of one month with the goal of earning as much money as you possibly can on your investments.

Step 1:
Using what you have learned about stocks, research at least four different stocks from different investment sectors (manufacturing, technology, energy, healthcare, etc.). Record your findings about each stock in the space below.

Name of Company	Ticker Symbol	Investment Sector	Past Performance (52 weeks)	Annual Dividend Yield (%)	Reason to Invest in this Stock

Step 2:
Determine how you will purchase your stock. Will you use a stockbroker or online trading? Explain why, based on what you learned from researching each option.

Step 3:
Select two or more stocks you intend to purchase with your $1,000. Create a spreadsheet that you can use to document each of the following for the stocks you selected:

- Purchase price
- Date of purchase
- Transaction costs
- Number of shares owned

- Last price for each day
- Daily change in the value of the stock
- Sale price of stock if/when sold
- Profits/losses on the stock

The spreadsheet should track the activity of each stock for one month, or 30 days.

Step 4:
At the end of the month, you will study your stock selections. Create a chart or graph illustrating the gains and losses on each stock over the course of 30 days.

Step 5:
Answer the questions below and be prepared to share your ideas in class discussion.

1. Do you think the stocks you purchased were good investments? Why or why not?

2. Would you choose the same investment strategy if you could re-do the project? Why or why not? Provide specific reasons, data, and examples.

3. What are the advantages of investing in the stock market?

4. What are the disadvantages of investing in the stock market?

5. Do you think you will buy individual stocks in the future based on this experience and what you have learned about investing in the stock market? Why or why not?

Stocks: Independent Practice Answer Key

Scenario: You have received a $1,000 inheritance that must be used for the purchase of stock and nothing else. You must keep the stock for a minimum of one month with the goal of earning as much money as you possibly can on your investments.

Step 1:
Using what you have learned about stocks, research at least four different stocks from different investment sectors (manufacturing, technology, energy, healthcare, etc.). Record your findings about each stock in the space below. *Answers will vary based on stocks selected by the student.*

Name of Company	Ticker Symbol	Investment Sector	Past Performance (52 weeks)	Annual Dividend Yield (%)	Reason to Invest in this Stock
International Business Machines (ex.)	*IBM*	*Technology*	*Current: $97.69* *High: #130.93* *Low: $69.50*	*2.06%*	*Solid company, "safe" investment, good yield*

Step 2:
Complete research about how you will purchase your stock. Will you use a stockbroker or online trading? Explain why based on what you learned from researching each option.

Answers will vary based on student research and opinion.

Step 3:
Select two or more stocks you intend to purchase with your $1,000. Create a spreadsheet that you can use to document each of the following for the stocks you selected:

- Purchase price
- Date of purchase
- Transaction costs
- Number of shares owned

Stocks: Independent Practice Answer Key

- Last price for each day
- Daily change in the value of the stock
- Sale price of stock if/when sold
- Profits/losses on the stock

The spreadsheet should track the activity of each stock for one month, or 30 days.

Spreadsheet design and content will vary based on student organization skills and stocks selected.

Step 4:
At the end of the month, you will study your stock selections. Create a chart or graph illustrating the gains and losses on each stock over the course of 30 days.

Graphs will vary based on type of graph created by student and the stocks selected.

Step 5:
Answer the questions below and be prepared to share your ideas in class discussion.

1. Do you think the stocks you purchased were good investments? Why or why not?

Answers will vary based on student stock selections and opinions.

2. Would you choose the same investment strategy if you could re-do the project? Why or why not? Provide specific reasons, data, and examples.

Answers will vary based on student stock selections and opinions.

3. What are the advantages of investing in the stock market?

Answers will vary but could include ideas such as higher rate of interest over the long term, ability to buy and sell stocks at will, etc.

4. What are the disadvantages of investing in the stock market?

Answers will vary but could include ideas such as the fact that there are no guarantees of making money, it takes time to complete research if investing without financial advice from a professional, etc.

5. Do you think you will buy individual stocks in the future based on this experience and what you have learned about investing in the stock market? Why or why not?

Answers will vary based on student opinions.

Teacher's Guide

Chapter 3: Mutual Funds

Looking Ahead

When investing, it is important to have a wide range of assets and to select them wisely; one commonly-purchased asset is the mutual fund. This chapter will discuss various types of mutual funds and the costs and benefits associated with each. In addition, students will see how the ability to calculate costs and potential returns can assist them in making smart investment decisions.

Getting Organized

- Students will need approximately one class period to complete the activities for this lesson.
- Make a copy of the **Mutual Funds: Independent Practice Handout** for each student.
- Students will need approximately one class period for the follow-up activities related to the Independent Practice assignment.

Learning Objectives

As students learn about mutual funds, they will:

- Discuss the key terms associated with mutual funds
- Discuss various types of mutual funds and how to select funds that match the amount of risk and diversification appropriate for their investment needs
- Calculate the administrative cost of owning mutual funds as well as the market value, net asset value and YTD percentage total return
- Select mutual funds and use a spreadsheet to track their investment portfolio
- Project earnings and draw conclusions about various types of investments

Standards

JumpStart:

- Apply reliable information and systematic decision making to personal financial decisions
  Standard 2: Find and evaluate financial information from a variety of sources
  Standard 4: Make financial decisions by systematically considering alternatives and consequences
- Use appropriate and cost-effective risk management strategies
  Standard 1: Identify common types of risk and basic risk management methods
- Implement a diversified investment strategy that is compatible with personal goals
  Standard 3: Evaluate investment alternatives
  Standard 4: Describe how to buy and sell investments

NCTM:

- Understand meanings of operations and how they relate to one another
- Compute fluently and make reasonable estimates
- Use mathematical models to represent and understand quantitative relationships
- Analyze change in various contexts
- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Develop and evaluate inferences and predictions that are based on data

Key Terms

- **Mutual fund:** a portfolio of many different investments managed by professionals and subject to laws and regulations designed to protect individual investors
- **Asset:** anything you own to which a monetary value can be assigned
- **Asset allocation:** a way to divide investments to minimize risk and maximize returns
- **Asset mix:** another term for asset allocation
- **Sales load:** a fee charged when you invest in the mutual fund
- **No load:** funds that do not require you to pay to invest
- **Net investment:** money placed in the fund after the sales load has been deducted
- **Mutual fund share:** a very small fraction of each individual stock or bond in the fund
- **Net asset value:** the price at which you can buy or sell one share of the mutual fund
- **Mutual fund family:** a number of different mutual funds that are all run by professionals associated with a specific company
- **Year-to-date (YTD) percentage total return:** the mutual fund's gains/losses over the past year

Teaching Strategies

1. Discuss the basic principles of investing.
    - Ask: *What does the saying, "Don't put all of your eggs in one basket," mean to you?*
      Discuss this phrase so that students understand its meaning.

    - Ask: *As an investor, why would you want to rely on a subject matter expert to assist you with selecting specific stocks or bonds?*
      Discuss as a group and encourage students to provide specific examples to support their opinions and reasons.

2. Practice activities throughout the chapter are cumulative and will assist students with the completion of the Independent Practice assignment. You can facilitate these activities using a computer and projector, with students at individual computers, or longhand on the board or overhead.

3. Direct students to complete the **Mutual Funds: Independent Practice Handout**. Provide students with time to work individually while beginning the project.

4. After completing the Independent Practice assignment, post student projects around the classroom and give each student one minute to describe how he or she made or lost money. Discuss the Independent Practice follow-up questions as a class.

5. To extend learning, have students work in pairs or small groups to create a short presentation about one of the specific types of stock or bond mutual funds outlined in the chapter. Within the presentation, students should provide at least one graph or chart that tracks the annual gains and losses of a mutual fund they researched.

Assessment Recommendations

1. Students could be assigned participation/completion grades for doing the in-class activities and the "Examples and Practice" activities.

2. Students should receive individual completion grades for the Independent Practice activity and a participation grade for the closing discussion.

3. Assign completion and participation grades for the extended student learning activity in step 5, above.

Examples and Practice: Answer Key

Examples and Practice, p. 21 (bottom of page)

- What is the net asset value of one share of this mutual fund?

The net asset value is calculated by determining the value of all assets at the end of the day, subtracting the daily amount of total expense charges, then dividing by the total number of mutual fund shares. In this case, the total value of the fund is $300,000,000 and the daily sales charge is $12,000 (the total value of the fund multiplied by the daily expense rate of 0.004%). Subtracting the daily sales charge leaves a net market value of $299,988,000. Dividing this by the total number of shares outstanding (20,000,000) results in a net asset value of $15.

- How much would it cost you to buy 100 shares of this no load fund?

One hundred shares at a net asset value of $15 would cost $1,500.

Mutual Funds: Independent Practice Handout

Name ____ Date __________________

Directions: Use the Internet to conduct research about various stock and bond mutual funds based on the scenario below. Create a spreadsheet that documents and calculates your expenses, gains and losses, and total market value of assets. Summarize your investment portfolio by creating at least one chart and one graph to represent your portfolio contents and the performance of each investment. Answer the follow-up questions on a separate sheet of paper.

Scenario:

- You have $20,000 to invest for a period of 30 days
- You must select at least five different funds, including some stock funds and some bond funds
- Your goal is to make as much money as possible by considering the amount of risk and diversification you need to achieve this goal

1. Document your research findings about various mutual funds in the space below.

2. List the specific mutual funds you are selecting for the project and why you think each is a good investment.

Follow-up Questions:

1. How successful were you in meeting your investment goals? Why? Give at least three reasons.
2. Which of your investments was the most risky? Least risky?
3. Do you think you allocated your assets correctly when you developed your portfolio? Why or why not? Provide three specific reasons.
4. Do you think any of the costs associated with your mutual funds were too high or too low? Explain.
5. What changes, if any, would you make to your portfolio or asset allocations if you could re-do the assignment? Why or why not?

Mutual Funds: Independent Practice Answer Key

Directions: Use the Internet to conduct research about various stock and bond mutual funds based on the scenario below. Create a spreadsheet that documents and calculates your expenses, gains and losses, and total market value of assets. Summarize your investment portfolio by creating at least one chart and one graph to represent your portfolio contents and the performance of each investment. Answer the follow-up questions on a separate sheet of paper.

Scenario:
- You have $20,000 to invest for a period of 30 days
- You must select at least five different funds, including some stock funds and some bond funds
- Your goal is to make as much money as possible by considering the amount of risk and diversification you need to achieve this goal

1. Document your research findings about various mutual funds in the space below.

   Answers will vary based on funds researched by the students.

2. List the specific mutual funds you are selecting for the project and why you think each is a good investment.

   Answers will vary based on funds researched by the students.

Follow-up Questions:
1. How successful were you in meeting your investment goals? Why? Give at least three reasons.
   Answers will vary based on funds selected by the students and their opinions.

2. Which of your investments was the most risky? Least risky?
   Answers will vary based on funds selected by the students and their opinions.

3. Do you think you allocated your assets correctly when you developed your portfolio? Why or why not? Provide three specific reasons.
   Answers will vary based on funds selected by the students and their opinions.

4. Do you think any of the costs associated with your mutual funds were too high or too low? Explain.
   Answers will vary based on funds selected by the students and their opinions.

5. What changes, if any, would you make to your portfolio or asset allocations if you could re-do the assignment? Why or why not?
   Answers will vary based on funds selected by the students and their opinions.

Teacher's Guide

Chapter 4: Risk and Diversification

Looking Ahead

When investing, students should know how much they can afford to risk and what types of investments pose the highest risks. By studying long-term trends and learning about how financial markets fluctuate, students will gain a greater understanding of why spreading their money among a range of investments is important.

Getting Organized

- Students will need approximately one class period to complete the activities for this lesson.
- While the use of individual computers with spreadsheet software (such as Excel) best facilitates the activities in the lesson, activities can be completed as pencil/paper tasks as well.
- Make a copy of the **Risk and Diversification: Independent Practice Handout** for each student.

Learning Objectives

As students learn about the basics of risk and diversification, they will:

- Discuss the key terms associated with risk and diversification
- Analyze trends and draw conclusions about the risk associated with specific investment opportunities
- Provide examples of ways to diversify investments as a means of lowering risk

Standards

JumpStart:

- Apply reliable information and systematic decision making to personal financial decisions
  Standard 2: Find and evaluate financial information from a variety of sources
  Standard 4: Make financial decisions by systematically considering alternatives and consequences
- Use appropriate and cost-effective risk management strategies
  Standard 1: Identify common types of risk and basic risk management methods
- Implement a diversified investment strategy that is compatible with personal goals
  Standard 3: Evaluate investment alternatives

NCTM:

- Understand meanings of operations and how they relate to one another
- Compute fluently and make reasonable estimates
- Use mathematical models to represent and understand quantitative relationships
- Analyze change in various contexts
- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Develop and evaluate inferences and predictions that are based on data

Key Terms

- **Risk**: likelihood of suffering losses or earning less than expected on financial investments
- **Long-term trend**: what happens to an investment over a period of several years
- **Fluctuations**: changes in stock prices
- **Upward trend**: the tendency for a stock price to rise over time
- **Price return**: change in a stock's price
- **Dividend return**: stock dividends received
- **Diversify**: put money into a variety of investments
- **Positive correlation**: the tendency of stock prices to move up or down together
- **Uncorrelated**: investments which have no relationship to the performance of other investments

Teaching Strategies

1. Introduce the topic of investing and begin a class discussion on types of investments.
   - Ask: *If you had $1,000 to invest any way that you wanted to, what would you do with it and why?*
     Select volunteers to share their ideas about what they would do with their money.

   - Ask: *Do you think it would be important to have a variety of different investments, or would that just make investing more difficult? Why?*
     Discuss student answers to this question as a class.

2. After working through the chapter, direct students to complete the **Risk and Diversification: Independent Practice Handout**.

3. After completing the Independent Practice assignment, discuss the assignment as a group.

4. To extend student learning, invite a stock analyst into the classroom to provide students with information about the specific processes he or she uses when analyzing stocks and how he or she uses this information to advise people about diversification as a means of reducing risk. Students should prepare investment questions in advance so the speaker can address their specific areas of concern.

Assessment Recommendations

1. Students could be assigned participation/completion grades for in-class discussion.

2. Students should receive individual grades for their completion of the Independent Practice assignment.

Risk and Diversification: Independent Practice Handout

Name ____ Date _______________

Directions: Follow the steps below to select stocks from various market sectors and study their performance over a given time period. Use that data to analyze stock trends and answer the questions related to risk and diversification.

1. Select a stock from each of the market sectors listed below. Write the name of the stock and its ticker symbol next to the sector.

- Energy: ____
- Finance: ____
- Healthcare: ____
- Technology: ____
- Transportation: ____

2. Using data from the past 30 days, create a chart similar to the one shown in your book that illustrates each stock's performance during that 30-day time period. You may do this on a separate sheet of paper, print charts from an Internet resource, or create them using Excel or a similar program.

3. In the space below, discuss the performance of each stock over the 30-day period you tracked. Note things such as price fluctuations and overall gains and losses over the course of the 30 days.

- Energy stock:

- Finance stock:

- Healthcare stock:

- Technology stock:

- Transportation stock:

Risk and Diversification: Independent Practice Handout

4. Do you see any correlation between any of the stocks you selected? If so, explain the positive correlation. If not, explain why the stocks are uncorrelated.

5. Of the stocks you selected, which appears to be the most risky? Why? Least risky? Why?

6. Do the stocks you included in this project represent stocks that would be good if you wanted to diversify as a means of reducing risk? Why?

Teacher's Guide

Chapter 5: Inflation

Looking Ahead

Focusing on the cost of day-to-day living, students will learn what inflation is, the factors that affect inflation, how inflation is measured and the effects of inflation on consumers and the U.S. economy. By focusing on the various goods and services that comprise the Consumer Price Index (CPI), students will see how inflation affects disposable income and the connection between the inflation rate and investment returns.

Getting Organized

- Students will need approximately one class period to complete the activities for this lesson.
- Make a copy of the **Inflation: Independent Practice Handout** for each student.

Learning Objectives

As students learn about inflation, they will:

- Discuss the key terms associated with inflation
- Calculate inflation rates and price series amounts
- Learn how the CPI is calculated and compare government calculations with actual costs of current market basket goods and services
- Discuss what happens to investment returns and purchasing power during periods of high inflation
- Make predictions about the future costs of goods and services

Standards

JumpStart:

- Apply reliable information and systematic decision making to personal financial decisions
  Standard 2: Find and evaluate financial information from a variety of sources
  Standard 4: Make financial decisions by systematically considering alternatives and consequences
- Implement a diversified investment strategy that is compatible with personal goals
  Standard 2: Explain how investing builds wealth and helps meet financial goals

NCTM:

- Understand meanings of operations and how they relate to one another
- Compute fluently and make reasonable estimates
- Use mathematical models to represent and understand quantitative relationships
- Analyze change in various contexts
- Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them
- Develop and evaluate inferences and predictions that are based on data

Key Terms

- **Disposable income:** the amount of money you have left for spending or saving after you pay taxes
- **Inflation rate:** the annual percentage increase in the prices of goods and services
- **Price series:** uses a set inflation rate along with actual prices to determine the hypothetical price of the same goods/services in the future
- **Bureau of Labor Statistics:** division of the U.S. Department of Labor that calculates the Consumer Price Index
- **Consumer Price Index/CPI:** a monthly price series showing the inflation rate for a market basket of goods and services
- **Market basket of goods and services:** items that people typically spend money on including food, housing , clothing, transportation, medical care, recreation, education, communication and miscellaneous goods and services
- **Purchasing power:** the value of money based on the amount and quality of goods and services it can buy
- **Capital gains:** profits earned from the sale of an asset, such as stock

Teaching Strategies

1. Discuss the concept of disposable income.
   - Ask: *What is disposable income?*
     Discuss this term so that students understand the definition.
   - Ask: *Do you think having less disposable income is good or bad for the economy? Why?*
     Discuss as a group and encourage students to provide specific examples and reasons to support their opinions.

2. Practice activities throughout the chapter are cumulative and will assist students with the completion of the Independent Practice assignment. You can facilitate these activities using a computer and projector, with students at individual computers, or longhand on the board or overhead.

3. Direct students to complete the **Inflation: Independent Practice Handout**. Provide students with time to work individually to complete the assignment.

4. After completing the Independent Practice assignment, discuss the follow-up questions as a class.

5. As a class, develop a list of ten goods or services for your customized market basket. Create a classroom chart that shows the monthly CPI and track the actual cost of these goods and services to see how it compares to the inflation rate.

Assessment Recommendations

1. Students could be assigned participation/completion grades for doing the in-class activities and the "Examples and Practice" activities.

2. Students should receive individual completion grades for the Independent Practice Handout and a participation grade for the closing discussion.

Inflation: Independent Practice Handout

Name ____ Date __________________

Part 1: Customize a market basket of goods and services by completing the chart below. Select items that you would typically buy or rely upon for each category.

Hint: To calculate the information in the last column, you will need to create a price series and assume the current rate of inflation remains constant.

Category	Good/ Service Selected	Current Price	Current Inflation Rate	Price of Good/ Service Next Month Based on Current Inflation Rate	Price of Good/ Service in One Year Based on Current Inflation Rate
Food/Beverages					
Housing					
Apparel					
Transportation					
Medical Care					
Recreation					
Education / Communication					
Other Goods and Services					

Part 2: Using the information from the chapter and the activity above, answer the questions below on a separate piece of paper.

1. As an investor, what would your annual average rate of return need to be for your portfolio in order to keep up with the inflation rate? Explain how you calculated this.

2. How would the amount of disposable income available to you be affected by inflation after one month? One year?

3. If your purchasing power was reduced, which goods/services would you cut from your market basket? Why?

4. As a consumer and an investor, why is it important to be in tune with inflation?

Inflation: Independent Practice Answer Key

Part 1: Customize a market basket of goods and services by completing the chart below. Select items that you would typically buy or rely upon for each category.

Hint: To calculate the information in the last column, you will need to create a price series and assume the current rate of inflation remains constant.

Answers will vary based on items selected by students

Catagory	Good/ Service Selected	Current Price	Current Inflation Rate	Price of Good/ Service Next Month Based on Current Inflation Rate	Price of Good/ Service in 1 Year Based on Current Inflation Rate
Food/Beverages					
Housing					
Apparel					
Transportation					
Medical Care					
Recreation					
Education / Communication					
Other Goods and Services					

Part 2: Using the information from the chapter and the activity above, answer the questions below on a separate piece of paper.

1. As an investor, what would your annual average rate of return need to be for your portfolio in order to keep up with the inflation rate? Explain how you calculated this.

   Students would need to earn an annual average rate of return that is equal to the inflation rate in order to continue to purchase the goods.

Inflation: Independent Practice Answer Key

2. How would the amount of disposable income available to you be affected by inflation after one month? One year?

   Answers will vary but should reference the idea that the amount of spending money available will most likely decrease due to the inflation rate.

3. If your purchasing power was reduced, which goods/services would you cut from your market basket? Why?

   Answers will vary based on items selected by students.

4. As a consumer and an investor, why is it important to be in tune with inflation?

   Answers will vary but could include ideas such as helping consumers create and maintain realistic household budgets, monitoring their return on investments to ensure they are making money and their investments are truly profitable, etc.

Building Your Future

Appendix: Online Resources

Below you will find a list of additional resources related to the chapters in this book. These resources can be used to extend your understanding and study of the subjects in each section.

Chapter 1: Bonds

Treasury Direct
Find information about U.S. government bonds and ways to purchase them.
http://www.savingsbonds.gov/

Library of Economics
Provides detailed articles about bonds and the various types available for investment.
http://www.econlib.org/library/Enc/Bonds.html

Chapter 2: Stocks

The Stock Market
Provides basics about the history of the stock market, picking and tracking stocks, market trends, and a glossary of stock market terminology.
http://library.thinkquest.org/3088/stockmarket/introduction.html

Chapter 3: Mutual Funds

U.S. Securities and Exchange Commission
Get information about important factors to consider when investing, common pitfalls, a mutual fund fee calculator, and a glossary of terms
http://www.sec.gov/investor/pubs/inwsmf.htm

Chapter 4: Risk and Diversification

U.S. Securities and Exchange Commission
Get tips and information about ways to minimize risk through diversifying investments
http://www.sec.gov/investor/pubs/assetallocation.htm

Chapter 5: Inflation

Bureau of Labor Statistics
Provides documentation about the CPI, inflation calculators, and statistics and information related to inflation
http://www.bls.gov

Building Your Future

Appendix: "Did You Know" Sources

Below you will find a list of sources for the "Did You Know" statements at the beginning of each chapter in the student guides.

Chapter 1: Bonds

Many bonds are exempt from some taxes, depending on the issuer.

Source: *The Bond Market Foundation http://www.tomorrowsmoney.org/section.cfm/388/451*

Chapter 2: Stocks

Over time, the total return on stocks has exceeded that of any other class of asset. One dollar invested in stocks in 1802 would have grown to $8.8 million in 2003, in bonds to $16,064, in treasury bills to $4,575, and in gold to $19.75.

Source: *Library of Economics and Liberty http://www.econlib.org/library/Enc/StockMarket.html*

Chapter 3: Mutual Funds

In 2007, 88 million individuals in the U.S. owned mutual funds, and 91% of mutual fund owners are using those funds as a way of saving for retirement—more than any other nation in the world.

Source: *Investment Company Institute http://www.icifactbook.org/fb_sec6.html#individual*

Chapter 4: Risk and Diversification

A portfolio of 20-30 securities generally will be less risky than a portfolio holding only one or two securities.

Source: *Jennison Dryden https://www.jennisondryden.com/view/page/jd/11266 http://www.icifactbook.org/fb_sec6.html#individual*

Chapter 5: Inflation

The U.S. and other developed countries have much lower rates of inflation (typically 1.0% to 4.0%; the U.S. is at 2.9%) than developing countries such as Zimbabwe (12,563%), Burma (35%) and Venezuela (18.7%).

Source: *CIA World Factbook https://www.cia.gov/library/publications/the-world-factbook/fields/2092.html*