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# Building Your Future

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*A Student and Teacher Resource  
for Financial Literacy Education*

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The Actuarial Foundation

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## 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](http://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](http://www.BeAnActuary.org).

# Building Your Future

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*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).*



## Chapter 1: Loans and Interest

### Looking Ahead

When someone decides to borrow money, there is always a cost associated with that borrowing. It is important to know about loans, and to understand that a loan can have a significant effect on the overall purchase price of whatever it is you are buying. Through exploring the laws and regulations in place to protect consumers from lender abuses, students can learn how to determine when they should take a loan and what type of loan would best meet their needs.

### 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 this lesson's activities, they can be completed as pencil/paper tasks.
- Make copies of the **Loans and Interest: Independent Practice Spreadsheet** if computers are unavailable.
- Make a copy of the **Loans and Interest Worksheet: Student Handout** for each student. (optional)

### Learning Objectives

As students focus on loans and interest, they will:

- Examine the importance of establishing good credit and maintaining their credit rating
- Explore both fixed and variable interest rate loans and how these loans affect the cost of an item
- Read about laws designed to protect consumers who utilize loans for purchases
- Learn how to select reputable lenders
- Discuss key terms associated with loans, interest and lenders
- Calculate interest payments on both fixed and variable interest rate loans
- Explore the positive and negative consequences of borrowing and lending money
- Create a series of spreadsheets to analyze the pros and cons of borrowing vs. saving

## 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 3: Summarize major consumer protection laws  
Standard 4: Make financial decisions by systematically considering alternatives and consequences
- Organize personal finances and use a budget to manage cash flow  
Standard 4: Apply consumer skills to purchase decisions

### 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

- **Loan:** an amount of money borrowed and repaid with interest
- **Credit report:** a report detailing an individual's credit history, including payments related to bills, loans, credit accounts and bankruptcies; used to determine one's creditworthiness
- **Credit rating:** a ranking, typically expressed as a number or letter, based on one's credit history and used by financial institutions for loan and credit approval
- **Annual percentage rate/APR:** yearly rate of interest; calculated by multiplying the interest rate by 12 (number of months in a year)
- **Fixed interest rate:** interest rate that stays the same over the course of the loan
- **Variable interest rate:** interest rate that can change over the course of a loan
- **Truth in Lending Act:** requires lenders to explain how they compute loan charges and list the annual percentage rate, also gives the borrower three business days to opt out of the loan
- **Loan sharks:** individuals who charge exorbitant interest rates on loans
- **Payday loan:** short-term, high interest loan

## Teaching Strategies

1. Discuss the "Did You Know" factoid and build on it to open a discussion of loans and interest.
  - Ask: *How many of you would offer to pay the clerk at a store more than the amount due for an item you had just purchased with cash? Why?*
  - Discuss student answers to this question. Since most will probably agree that they would not pay more money for the item, read the "Did You Know" factoid and then facilitate a short discussion using questions such as: *If you aren't willing to pay more money for an item when you purchase it with cash at a store, why would people be willing to pay over \$9,000 more for a car?*
  - Remind students that there will be times in life when they will want or need to make purchases for which they do not have the cash. In these situations, they are left with few options other than taking a loan.
  - Explain that to make informed decisions about taking a loan, students must have a thorough understanding of what it means to take a loan in terms of responsibility and financial obligations.
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 Independent Practice assignment. All students should answer the question: *Which loan option did you select? Why?* Use the **Loans and Interest: Independent Practice Answer Keys** page for grading/discussing the assignment.
  - If individual computers are available, direct students to complete the activity using computers. They should print out their final copies for submission upon completing the activity.
  - If the assignment is to be completed without a computer, direct students to construct their own spreadsheets longhand on the **Loans and Interest: Independent Practice Spreadsheet** and show their calculations in writing.
4. For additional practice on each concept in the chapter, distribute the **Loans and Interest Worksheet: Student Handout** as homework or as an additional classroom practice activity.

5. Correct the **Loans and Interest Worksheet: Student Handout** as a group, encouraging volunteers to share and explain their answers. Answer questions as needed during this review activity. Use the **Loans and Interest Worksheet: Answer Key** for this activity.
6. To extend student learning, invite a local lender into the classroom to show students a typical loan application and talk to them about the process of obtaining a loan. Have students prepare questions in advance so they can ask the lender about specific topics relating to loans for young people. Have the lender explain in more detail the laws that are designed to protect borrowers.

### 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 Independent Practice assignment and Loans and Interest Worksheet. 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 6, above.

# Loans and Interest: Independent Practice Spreadsheet

Name \_\_\_\_\_ Date \_\_\_\_\_

	A	B	C	D	E	F	G
1							
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# Loans and Interest: Independent Practice Answer Key

## Independent Practice Answer Key A

	A	B	C	D	E	F
1			<b>Bank Loan</b>			
2	<b>Month</b>	<b>Interest Rate</b>	<b>Beginning Outstanding Balance</b>	<b>Interest Payment</b>	<b>Loan Payment</b>	<b>Ending Outstanding Loan</b>
3	1	0.92%	\$1,500.00	\$13.80	\$160.00	\$1,353.80
4	2	0.92%	\$1,353.80	\$12.45	\$160.00	\$1,206.25
5	3	0.92%	\$1,206.25	\$11.10	\$160.00	\$1,057.35
6	4	0.92%	\$1,057.35	\$9.73	\$160.00	\$907.08
7	5	0.92%	\$907.08	\$8.35	\$160.00	\$755.43
8	6	0.92%	\$755.43	\$6.95	\$160.00	\$602.38
9	7	0.92%	\$602.38	\$5.54	\$160.00	\$447.92
10	8	0.92%	\$447.92	\$4.12	\$160.00	\$292.04
11	9	0.92%	\$292.04	\$2.69	\$160.00	\$134.72
12	10	0.92%	\$134.72	\$1.24	\$135.96	\$0.00
13						

## Independent Practice Answer Key B

	A	B	C	D	E	F
1			<b>Savings Account</b>			
2	<b>Month</b>	<b>Interest Rate</b>	<b>Beginning Account Balance</b>	<b>Interest Payment</b>	<b>Deposits</b>	<b>Ending Account Balance</b>
3	1	0.23%	\$0.00	\$0.00	\$160.00	\$160.00
4	2	0.23%	\$160.00	\$0.37	\$160.00	\$320.37
5	3	0.23%	\$320.37	\$0.74	\$160.00	\$481.10
6	4	0.23%	\$481.10	\$1.11	\$160.00	\$642.21
7	5	0.23%	\$642.21	\$1.48	\$160.00	\$803.69
8	6	0.23%	\$803.69	\$1.85	\$160.00	\$965.54
9	7	0.23%	\$965.54	\$2.22	\$160.00	\$1,127.76
10	8	0.23%	\$1,127.76	\$2.59	\$160.00	\$1,290.35
11	9	0.23%	\$1,290.35	\$2.97	\$160.00	\$1,453.32
12	10	0.23%	\$1,453.32	\$3.34	\$160.00	\$1,616.66
13	11	0.23%	\$1,616.66	\$3.72	\$160.00	\$1,780.38
14	12	0.23%	\$1,780.38	\$4.09	\$160.00	\$1,944.48
15						

# Loans and Interest Worksheet: Student Handout

Name \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Use what you have learned about loans and interest to solve each problem below. Be prepared to discuss your answers.

1. When a person applies for a loan at a bank, the bank must decide whether or not the person will be able to repay the loan. List at least three things the bank will consider before making the loan.
  
  
  
  
  
  
  
  
  
  
2. When shopping for a loan, what types of questions should the borrower ask? List at least three specific questions.
  
  
  
  
  
  
  
  
  
  
3. You need to take a one-year loan. At the moment the fixed interest rate is high at 8.75% APR. The bank offers you an adjustable rate loan with a rate beginning at 6.5% APR. The interest rate could increase as much as 3% over the course of the loan. Which loan would you select? Why?

# Loans and Interest Worksheet: Teacher Answer Key

**Directions:** Use what you have learned about loans and interest to solve each problem below. Be prepared to discuss your answers.

1. When a person applies for a loan at a bank, the bank must decide whether or not the person will be able to repay the loan. List at least three things the bank will consider before making the loan.

Answers will vary but could include: Ability to repay the loan (i.e. income), credit rating, amount being requested in the loan, interest rate the borrower might be charged, etc.

2. When shopping for a loan, what types of questions should the borrower ask? List at least three specific questions.

Answers will vary but could include: interest rate, cost of getting the loan, pre-payment penalties, amount of time allowed to repay the loan, etc.

3. You need to take a one-year loan. At the moment the fixed interest rate is high at 8.75% APR. The bank offers you an adjustable rate loan with a rate beginning at 6.5% APR. The interest rate could increase as much as 3% over the course of the loan. Which loan would you select? Why?

Answers will vary based on the amount of risk a borrower is willing to take. Things to take into consideration include current loan trends—whether rates are going up or down—as well as whether the borrower can really afford the loan at 9.5% if interest rates rise. Creating a spreadsheet to illustrate possible scenarios would be one way for students to determine which loan would best suit their needs.

# Teacher's Guide

## Chapter 2: Home Loans

### Looking Ahead

Purchasing a home is one of the biggest investments a person will ever make. A home is also an important asset to include when determining one's financial health. There are many factors to consider when purchasing a home, such as down payments, interest rates and the terms of the loan. These factors affect the overall price paid for the home. We'll look at all the things that need to be considered when it comes to financing a home.

### Getting Organized

- Students will need approximately one class period to complete the activities for this lesson.
- Access to the Internet and/or computers with spreadsheet software would make completion of the lesson more efficient.
- If spreadsheet software is not available, consider the use of calculators (online or handheld) for loan comparison purposes in the activities.

### Learning Objectives

As students learn about home loans and how to select a home loan that best suits their needs, they will:

- Discuss key terms associated with home loans and the Truth in Lending Act
- Practice using formulas and calculations to compare fixed and variable interest rate loans of varying terms
- Analyze information about the overall costs of various home loan options and select the loan that best suits their needs and their ability to repay the loan
- Examine various types of loan interest options and the effect they have on the home's overall price

## 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 3: Summarize major consumer protection laws  
Standard 4: Make financial decisions by systematically considering alternatives and consequences
- Organize personal finances and use a budget to manage cash flow  
Standard 4: Apply consumer skills to purchase decisions
- Maintain creditworthiness, borrow at favorable terms, and manage debt  
Standard 1: Identify the costs and benefits of various types of credit  
Standard 4: Summarize major consumer credit laws

### 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)

- Consider other costs associated with obtaining home loans
- Read about refinancing options and how to prevent foreclosure on a home loan

## Key Terms

- **Mortgage:** a loan used to purchase a home
- **Down payment:** the amount of money a buyer pays in cash for the purchase of a house
- **Interest:** money that is paid to the lender by the borrower for the use of the lender's money
- **Principal:** the original borrowed amount
- **Interest rate:** percentage paid to the lender for the privilege of borrowing the money
- **Credit rating:** a ranking, typically expressed as a number or letter, based on one's credit history and used by financial institutions for loan and credit approval
- **Fixed interest rate:** interest rate that stays the same over the course of the loan
- **Variable interest rate:** interest rate that can change over the course of a loan
- **Lifetime cap:** a limit on how much the interest rate of a variable-rate loan can increase
- **Equity:** a home's market value less the outstanding mortgage balance
- **Amortization schedule:** a schedule for repaying the loan
- **Closing costs:** fees paid in addition to the cost of the home
- **Pre-payment penalties:** fees designed to keep the borrow from paying the loan off early
- **Escrow:** property or money held by a third party until the terms of a contract are met
- **Truth in Lending Act:** requires lenders to explain how they compute loan charges and list the annual percentage rate, also gives the borrower three business days to opt out of the loan
- **Refinancing:** paying off the original loan by taking out a new, typically more favorable loan
- **Delinquent:** past due on a scheduled loan payment
- **Workout:** formal repayment or loan forgiveness arrangement between a borrower and lender
- **Foreclosure:** legal process that allows a lender to seize property if the mortgage loan is not paid; typically, the lender sells the property and applies the proceeds to the outstanding debt

## Teaching Strategies

1. 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.
2. Have students brainstorm a list of specific things they can do, even at a young age, to establish and maintain a good credit history. Record the items on the board/overhead.
3. By now, students probably have a good understanding of interest rates. Explain the concept of a fixed rate/conventional loan vs. a variable rate/adjustable loan. Use a loan calculator (such as the one available at <http://www.loanscalculator.org>) to illustrate the amount of money saved or spent over the course of a loan simply because of the interest rate.

4. Direct students back to the spreadsheet on page 11 of the student guide and work as a class to answer the questions related to refinancing. Use this as an opportunity to discuss the importance of shopping for the best interest rate, loan terms, and the type of loan that will best match one's ability to repay. If time allows, use this opportunity to visit <http://www.alta.org/consumer/refinance.cfm> to read and discuss the article "Should You Refinance?"
5. Direct students to the Independent Practice assignment and review the instructions. Students can use the printed spreadsheet on page 4 of this guide if they do not have access to computers. Remind students that they have already created a spreadsheet that will calculate the information needed. They simply need to shop for a loan. They will need to compare a fixed-rate loan to a variable-rate loan. In both cases, they will be financing a \$200,000 home with a 20% down payment. Once their spreadsheets have been completed, students should answer the four questions on a separate sheet of paper.
6. When all students have completed the assignment, divide students into two groups. Those who selected fixed rate loans should go to one side of the room, those who selected variable rate loans should go to the other side. Select students from each group to answer the four questions related to their loan. Compare the reasons why some students chose fixed rates and others chose variable rates.

### Assessment Recommendations

1. Students could be assigned participation/completion grades for all discussion and group activities.
2. Accuracy grades should be assigned for the spreadsheets and calculations completed for the Independent Practice activity.
3. A completion grade could be assigned for the answers students wrote for the four questions pertaining to their loan selection in the Independent Practice activity.

### Extension Activities

1. So that students can better understand the loan process and the importance of a good credit rating, have the students complete a loan application and discover the types of documentation and information a home buyer must provide to the lender to secure a home loan.
2. Invite a lender in to speak about the mortgage loan process and the importance of good credit.

## Chapter 3: Auto Loans

### Looking Ahead

There are many factors to consider when purchasing a car. Given the potentially significant costs, it is important to consider a wide range of factors when selecting a vehicle and determining how to pay for it. By learning about concepts such as trade-in and book value and knowing how to analyze dealer incentives, students will be able to determine whether leasing or purchasing is a more sensible, cost-efficient method of obtaining a car.

### 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 **Auto Loans: Lease vs. Purchase Handout** for each student.
- Make a copy of the **Auto Loans: Independent Practice Handout** for each student.

### Learning Objectives

As students learn about the basics of auto loans, they will:

- Discuss key terms associated with making a car loan
- Consider whether to buy a new or pre-owned vehicle
- Apply the pros and cons between leasing and purchasing a vehicle
- Calculate auto loan and lease payments by creating and analyzing spreadsheets and utilizing online calculators
- Make decisions about auto financing options based on data related to individual needs and financial situations

## 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
- Organize personal finances and use a budget to manage cash flow  
Standard 4: Apply consumer skills to purchase decisions
- Maintain creditworthiness, borrow at favorable terms, and manage debt  
Standard 1: identify the costs and benefits of various types of credit

### 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

- **Trade-in value:** amount the dealer gives you for the car you're providing as partial payment for the car you wish to purchase
- **Book value:** how much a particular car is worth based on condition, mileage and other factors
- **Incentives:** factors such as special finance rates, rebates or other offers designed to encourage buyers to purchase a vehicle
- **Lease:** paying only a portion of the vehicle's sales price and returning it to the dealer at the end of the specified time
- **Purchase:** paying the car's full price and keeping it for as long as you want

## Teaching Strategies

1. Select a student to read the "Did You Know" factoid aloud.
  - Ask: *What are the hidden costs of owning a car that people sometimes overlook?*
  - Record this list on the board or overhead. Some items that should be included are:
    - Insurance
    - Maintenance (oil changes, tires, etc.)
    - Sales tax (at time of purchase)
    - Property tax (annually, if applicable)
    - Inspection and licensing fees (annual, if applicable)
    - Gasoline
  - Discuss briefly why these costs should be considered as part of the car buying process.
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. Review the "Lease vs. Purchase: Pros and Cons" chart in the student materials and distribute the **Auto Loans: Lease vs. Purchase Handout** to each student. Have students work in pairs or small groups to complete the spreadsheet created earlier and answer each question. Discuss the answers as a group, pointing out the pros and cons of purchasing and leasing as you go. See **Auto Loans: Lease vs. Purchase Handout Answer Key**.
4. So that students can apply what they have learned and practice their consumer decision-making skills, distribute the **Auto Loans: Independent Practice Handout** as homework or as an additional classroom practice activity.
5. Discuss the **Auto Loans: Independent Practice Handout** as a group, encouraging volunteers to share and explain their answers. Ask students to share the processes they used for calculating the cost of the vehicles and how the prices of the vehicles relate to the overall funds available. Refer back to the "factoid" and discuss the percentage of income that will be spent on the purchase option the student selected. Discuss reasons why young buyers may be able to spend more of their income on cars than their parents can. See **Auto Loans: Independent Practice Answer Key**.

6. To extend student learning, use newspapers or the Internet and review current “sales” and “specials” on cars. Use online calculators or the spreadsheet created for the assignment and have students determine whether or not these “deals” are truly money savers for potential buyers.

### Assessment Recommendations

1. Students could be assigned participation/completion grades for the in-class and “Examples and Practice” activities.
2. Students should receive accuracy and participation grades for their completion of the **Auto Loans: Lease vs. Purchase Handout** and related activities.
3. Assign completion and participation grades for the **Auto Loans: Independent Practice Handout** and related discussion.
4. Assess participation, completion and/or accuracy grades for the extended student learning activity in step 6, above.

# Auto Loans: Lease vs. Purchase Handout

Name \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** Below you will find two different scenarios: one for purchasing a car, one for leasing the same car. Use the data provided to answer the questions below each scenario. Be prepared to use this information in class discussion.

## Scenario 1

You want to buy a car that costs \$25,000. You will take a 48-month loan. You have \$2,000 saved for a down payment. The dealer is also offering a \$6,000 rebate as an incentive. You do not have a car to trade in. You also qualify for a first-time buyer incentive of \$500. Your interest rate on the loan will be 6.5%. You will have to pay 7.5% sales tax on the car when you purchase it, and it will cost you \$25 per year to license the car. You will pay property tax of \$480 on the car each year. Your monthly insurance premium on the car is \$56 per month.

1. What is the total cost of the car over four years including all principal, interest, taxes, insurance and fees?
2. What is your monthly loan payment for the car including principal and interest?
3. After you have repaid the loan, what will you pay annually for taxes, insurance and fees?
4. If you keep the car for seven years, how much money will you have spent in principal, interest, taxes, insurance and fees?

# Auto Loans: Lease vs. Purchase Handout

Name \_\_\_\_\_ Date \_\_\_\_\_

## Scenario 2

You want to lease a \$25,000 car for 48 months. You will not make a down payment. You must pay a \$500 security deposit on the car before you leave the dealership. There is an additional fee of \$250 for the cost of completing the dealer lease paperwork. Your total monthly lease payment is \$383 per month. In your lease agreement, it has been determined that the value of the car will be \$14,000 at the end of the lease term. You are allowed 12,000 miles per year for the car, and the mileage fee for overages is \$.25 per mile. You pay \$68 per month for insurance, and it costs you \$25 per year to license the car. There is a \$1,500 early termination fee on the lease. There is a \$500 penalty if you turn the car in with "excess wear and tear."

1. What is the total cost of the car over four years including all payments, insurance and fees?
2. You are in a car accident during the last year of the lease and the car is a total loss, thus ending the lease early. How will this affect you?
3. At the end of your 48-month lease, you go to the dealer to trade the car in for another. Upon reviewing the odometer, the dealer notices that it reads 59,825 miles. What will happen?
4. When you go to return the car, you decide you like it and want to purchase it. How much will this cost you?

# Auto Loans: Lease vs. Purchase Handout Answer Key

**Directions:** Below you will find two different scenarios: one for purchasing a car, one for leasing the same car. Use the data provided to answer the questions below each scenario. Be prepared to use this information in class discussion.

## Scenario 1

You want to buy a car that costs \$25,000. You will take a 48-month loan. You have \$2,000 saved for a down payment. The dealer is also offering a \$6,000 rebate as an incentive. You do not have a car to trade in. You also qualify for a first-time buyer incentive of \$500. Your interest rate on the loan will be 6.5%. You will have to pay 7.5% sales tax on the car when you purchase it, and it will cost you \$25 per year to license the car. You will pay property tax of \$480 on the car each year. Your monthly insurance premium on the car is \$56 per month.

1. What is the total cost of the car over four years including all principal, interest, taxes, insurance and fees?

\$26,875.63 (See specifics below)

Down Payment = \$2,000.00

Principal = \$16,500.00

Interest = \$2,280.13

Sales tax = \$1,387.50 ( $\$18,500 \times 7.5\%$ )

Property tax = \$1,920 ( $\$480 \times 4$  years)

Insurance = \$2,688 ( $\$56 \times 48$  months)

Fees (licensing) = \$100 ( $\$25 \times 4$  years)

2. What is your monthly loan payment for the car including principal and interest? \$391.30 (financed \$16,500 at 6.5% for 48 months)
3. After you have repaid the loan, what will you pay annually for taxes, insurance and fees? \$1,177 ( $\$480$  for property taxes +  $\$56 \times 12 = \$672$  for insurance +  $\$25$  for licensing)
4. If you keep the car for seven years, how much money will you have spent in principal, interest, taxes, insurance and fees? \$30,256.63 (Answer to question 1 above + answer to question 3 above  $\times 3$ )

# Auto Loans: Lease vs. Purchase Handout Answer Key

## Scenario 2

You want to lease a \$25,000 car for 48 months. You will not make a down payment. You must pay a \$500 security deposit on the car before you leave the dealership. There is an additional fee of \$250 for the cost of completing the dealer lease paperwork. Your total monthly lease payment is \$383 per month. In your lease agreement, it has been determined that the value of the car will be \$14,000 at the end of the lease term. You are allowed 12,000 miles per year for the car, and the mileage fee for overages is \$.25 per mile. You pay \$68 per month for insurance, and it costs you \$25 per year to license the car. There is a \$1,500 early termination fee on the lease. There is a \$500 penalty if you turn the car in with "excess wear and tear."

1. What is the total cost of the car over four years including all payments, insurance and fees?

\$22,498

Payments = \$18,384 ( $\$383 \times 48$  months)

Insurance = \$3,264 ( $\$68 \times 48$  months)

Licensing = \$100 ( $\$25 \times 4$  years)

Fees = \$750 (security deposit and paperwork)

2. You are in a car accident during the last year of the lease and the car is a total loss, thus ending the lease early. How will this affect you?

You will potentially have to pay the \$1,500 for early lease termination along with the \$500 for "excess wear and tear."

3. At the end of your 48-month lease, you go to the dealer to trade the car in for another. Upon reviewing the odometer, the dealer notices that it reads 59,825 miles. What will happen?

You will have to pay a mileage overage charge of \$2,956.25 because you exceeded the 48,000 miles you were allowed ( $12,000 \times 4$  years) by 11,825 miles ( $59,825 - 48,000$ ) and the cost per mile is \$.25 ( $11,825 \times .25$ )

4. When you go to return the car, you decide you like it and want to purchase it. How much will this cost you?

The car will be worth \$14,000 at that time, so you will have to finance \$13,500 at the current rate and for a period of time that you select. (This is \$14,000 less the refundable \$500 security deposit.)

# Auto Loans: Independent Practice Handout

Name \_\_\_\_\_ Date \_\_\_\_\_

**Directions:** You want to purchase your first car. Below is data related to the two cars you are considering. Study the data, use spreadsheets you have created, and use the online calculators at [http://cucalc.cuna.org/1/lease\\_vs\\_buya.html](http://cucalc.cuna.org/1/lease_vs_buya.html) to help you determine which car you will purchase. Be prepared to defend your selection in class discussion.

## Buyer Data:

- High school senior
- Has \$1,500 saved for a down payment
- Works part-time earning approximately \$150 per week
- Planning to attend college away from home after graduation
- Has a good driving record and has maintained good grades, so qualifies for discounts on insurance, making monthly insurance premiums \$100
- Does not currently own a car

## Car 1:

- New, current model year compact car
- Price is \$16,000
- Dealer incentives = \$2,000 cash rebate or 3.9% financing for 60 months
- Dealer offers a first-time buyer discount of \$500
- Interest rate on a 48-month loan is 6.5%
- You could lease the vehicle

## Car 2:

- Used car, three years old, 40,000 miles
- Price is \$9,000
- Interest rate on a 48-month loan is 7%
- Leasing the vehicle is not an option

1. Which car did you decide to purchase? Why?
2. How will you be paying for the car?
3. What will your total cost for the car be at the end of your loan/lease?
4. What factors influenced your buying and financing decisions?

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- You could lease the vehicle
  - Option 1: Do a four-year lease and use the calculator to find a lease payment of \$210.10 per month.
  - Option 2: Take the \$2,000 cash rebate and finance the remainder at 6.5% for 48 months for a payment of \$284.58 per month.
  - Option 3: Use the 3.9% financing for 60 months for a payment of \$257.20, noting that the payments will continue for five years, not four.

## Car 2:

- Used car, three years old, 40,000 miles
- Price is \$9,000
- Interest rate on a 48-month loan is 7%
- Leasing the vehicle is not an option
  - Option: Purchase car at 7% for 48 months for a payment of \$179.60 knowing that by the time the car is paid off it will be seven years old and probably have nearly 90,000 miles on it.

1. Based on the buyer data and information about each car, which one did you decide to purchase? Why? *Answers will vary.*
2. How will you be paying for the car? *Answers will vary.*
3. What will your total cost for the car be at the end of your loan/lease? *Answers will vary.*
4. What factors influenced your buying and financing decisions? *Answers will vary.*

# Teacher's Guide

## Chapter 4: Insurance

### Looking Ahead

Insurance of all types is important in preventing financial ruin due to illness, injury, property loss, and even death. By learning about the types of insurance, students will be able to minimize their financial risk through purchasing and utilizing insurance policies that meet their financial needs and goals.

### Getting Organized

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

### Learning Objectives

As students learn about the basics of insurance, they will:

- Discuss key terms associated with life, health, auto and homeowner's/renter's insurance
- Learn what types of insurance are required by law and why they are required
- Describe the specific needs addressed by each type of insurance and the cost factors for each type of policy
- Weigh the cost of insurance premiums against the risks associated with not carrying various types of insurance
- Discover ways to save money on insurance premiums with discounts, bundling policies and selecting cost-saving options
- Make decisions on purchasing various insurance policies based on cost and individual needs

## 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
- Organize personal finances and use a budget to manage cash flow  
Standard 4: Apply consumer skills to purchase decisions
- Use appropriate and cost-effective risk management strategies  
Standard 2: Explain the purpose and importance of property and liability insurance protection  
Standard 3: Explain the purpose and importance of health, disability, and life insurance protection

### 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

- **Insurance:** promised payment for specific, potential and/or future losses in exchange for a periodic payment
- **Insurer:** a company that pays to compensate another company or person for losses or damages as described in an insurance policy as long as the premium is paid
- **Insurance policy:** a written contract between an insurer and another company or person describing the term of the insurance, what is covered, the cost of the premium and the deductible amount
- **Policyholder:** the owner(s) of an insurance policy
- **Premium:** the periodic payment for an insurance policy
- **Claim:** official notification sent to an insurance company requesting payment of an amount due based on what is covered by the terms of the insurance policy
- **Deductible:** a set dollar amount an insured person pays before the insurer starts to make payments for covered services
- **Life insurance:** money paid to a designated person/group of people when you die
- **Risk:** the probability that something may happen
- **Beneficiary:** the person(s) who will receive the insurance payout in the event that you die
- **Estate:** wealth and possessions left by someone to be divided after they die
- **Health insurance:** protects you from monetary losses associated with illness or bodily injury
- **Coverage:** what the insurance company includes as part of the insurance policy
- **Benefits:** specific services the insured is entitled to under the policy
- **Co-pay:** a form of cost-sharing that requires the insured to pay a fixed dollar amount for a medical service or prescription
- **Co-insurance:** a form of cost-sharing that requires the insured to pay a set percentage of medical expenses after the deductible has been met
- **Flexible Spending Account/FSA:** allows people to put a set amount of wages into a special account without paying taxes on those wages; money in this account can be used to pay for uncovered medical expenses such as co-pays, the deductible, and co-insurance payments
- **COBRA:** a law that allows a person to continue to be covered under the company's health insurance plan for a specified amount of time as long as s/he pays for that coverage
- **Auto insurance:** a means of protecting you and others in the event of an accident, theft, etc.
- **Homeowner's and renter's insurance:** protects you from financial loss if your home is damaged or destroyed, a theft occurs, or you face certain types of medical or liability claims

## Teaching Strategies

1. Divide the class into four small groups and assign each group one of the four types of insurance discussed in the chapter: life, health, auto or homeowner's/renter's. Provide the groups with 15-20 minutes of class time to read and discuss the content and create a poster that represents what they learned about their particular type of insurance. In addition, the group should devise a concise way of reinforcing key concepts for classmates. Encourage creativity through the use of skits, songs, acronyms, etc. to help students remember key concepts. Finally, each group should develop three to five quiz questions related to the type of insurance they presented.

2. Provide five minutes for each group to present their type of insurance. To engage the students in the audience while the reports are being given, direct them to the particular section of the chapter or the chart that summarizes the insurance information in that section. You can put a checkmark by each of the key characteristics as they are orally presented by the reporting group. Collect the quiz questions from each group as they finish their presentations.
3. After all groups have presented their work, direct students to take out a sheet of paper and label it "Insurance Quiz." Read the quiz questions provided by each group and provide students with time to answer each question. Upon completion of the quiz, discuss each question and use the questions as catalysts for further discussion.
4. So that students can apply what they have learned and practice their consumer decision-making skills, distribute the **Insurance: Independent Practice Handout** as homework or an additional classroom practice activity.
5. Discuss the **Insurance: Independent Practice Handout** as a group, encouraging volunteers to share and explain their answers and justify their reasons for choosing specific types of insurance coverage.

### Assessment Recommendations

1. Students could be assigned participation/completion grades for the in-class activities.
2. Students should receive accuracy grades for completion of the **Insurance: Independent Practice Handout** since it requires precise calculation and analysis of information.  
**Note:** As individual answers will vary, no answer key has been provided for this worksheet.
3. Assign participation or completion grades for the extended student learning activity below.

### Extension Activity

To extend student learning, use newspapers or the Internet to monitor insurance-related issues in your city, state, and the country. Encourage students to bring in examples of stories that illustrate the importance of the various types of insurance discussed and share them with the class. Post these stories on an insurance awareness bulletin board for others to see.

# Insurance: Independent Practice Handout

Name \_\_\_\_\_ Date \_\_\_\_\_

You are just starting your first job and need to get insurance. You have an insurance line item in your budget of \$2,000 per year. Using the chart below, conduct research about the cost of life, health, auto and homeowner's/renter's insurance. Use your findings to make decisions about the types of insurance coverage you will be able to afford, knowing that they are all important. Your goal should be to prioritize the types of insurance you need and then to find pricing that will enable you to purchase life, health, auto and homeowner's/renter's insurance. Be prepared to discuss your findings with classmates. Some helpful research links are shown below.

## Life and Health Insurance Foundation for Education

<http://www.lifehappens.org>

## Insurance Information Institute

<http://www.iii.org/>

Research Findings			
Type of Insurance	Coverage	Deductible	Approximate Cost
Life			
Health			
Auto			
Home			

# Insurance: Independent Practice Handout

1. Based on your \$2,000 annual budget, what type(s) of insurance did you elect to purchase?
2. Why did you select these types of insurance?
3. What risks do you minimize by selecting these types of insurance?
4. What risks do you run by not selecting the remaining types of coverage?
5. Of the four types of insurance researched, which do you think is most important? Why?
6. Why do you think the cost of health insurance is so high?
7. Do you think it's fair that everyone does not pay the same amount of money for life, health, auto and homeowner's/renter's insurance? Why?
8. In your opinion, what is the best type of life insurance for you? Why?
9. Based on what you have learned, what types of insurance do you think you will purchase as an adult? Why?
10. What questions do you still have about insurance?

# 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: Loans and Interest

#### Teacher's Federal Credit Union

Utilize loan calculators and compare rates on various types of loans

[http://www.teachersfcu.org/rates/consumerloan\\_rates.html](http://www.teachersfcu.org/rates/consumerloan_rates.html)

### Chapter 2: Home Loans

#### Loan Calculator

Free tool with a number of loan calculators that can be utilized

<http://www.loanscalculator.org/>

#### American Land Title Association

Article "Should You Refinance"

<http://www.alta.org/consumer/refinance.cfm>

### Chapter 3: Auto Loans

#### Credit Union National Association (CUNA)

Find free auto loan calculators that illustrate the cost of leasing vs. purchasing

[http://cucalc.cuna.org/10562/lease\\_vs\\_buya.html](http://cucalc.cuna.org/10562/lease_vs_buya.html)

### Chapter 4: Insurance

#### Life and Health Insurance Foundation for Education

Find specific information about health and life insurance along with calculators for determining coverage and cost

<http://www.lifehappens.org>

#### Insurance Information Institute

Includes information about all types of insurance, a glossary of insurance terms, and important facts and statistics related to insurance

<http://www.iii.org/>

# 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: Loans and Interest

If you buy a \$35,000 car and take a six-year loan at a rate of 7.9%, you will end up paying over \$9,000 in interest on the car, making the total cost of the car \$44,000.

**Source:** *Cars.com Auto Loan Calculator* <http://www.cars.com/go/advice/financing/calc/loanCalc.jsp?mode=full>

### Chapter 2: Home Loans

For the vast majority of American homeowners, their home is their most important financial asset. Some 34% of homeowners say their home accounts for “all or most” of their personal financial worth and another 34% say it represents about half of their worth.

**Source:** *Pew Research Center Social Trends Report, December 6, 2006*

### Chapter 3: Auto Loans

According to the Department of Labor’s Bureau of Labor Statistics, the annual cost of car ownership and operation is 17% of the average household’s expenditures, ranking second only to the cost of housing.

**Source:** *Bureau of Labor Statistics* <http://www.bikesatwork.com/carfree/cost-of-car-ownership.html>

### Chapter 4: Insurance

As of March 2008, nearly 43 million U.S. citizens, approximately 14.3% of our country’s population, had no health insurance coverage.

**Source:** *National Center for Health Statistics* [http://www.cdc.gov/nchs/data/nhis/earlyrelease/200809\\_01.pdf](http://www.cdc.gov/nchs/data/nhis/earlyrelease/200809_01.pdf)