



BUILDING YOUR FUTURE

Establishing a Foundation

A Student and Teacher Resource for Financial Literacy Education



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 essential financial principles for establishing a foundation in Book 1, paving the road to success in Book 2, expanding responsibilities in Book 3, and accumulating wealth in Book 4. The series also addresses the mathematical skills that students need to live a financially healthy life. They will be able to see the real-world consequences of mastering your finances, which should help them understand the relevance of good mathematical skills. We hope you and your students enjoy this *Building Your Future* book series.

About The Actuarial Foundation

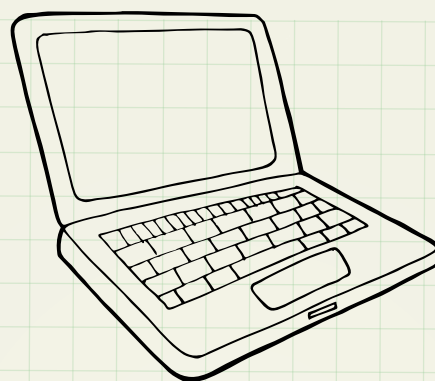
The Actuarial Foundation is a 501(c)(3) nonprofit organization. The mission of The Actuarial Foundation is to enhance math education and financial literacy through the talents and resources of actuaries. Please visit the Foundation's website at www.actuarialfoundation.org for additional educational materials.



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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. *US News and World Report*, the *Jobs Rated Almanac*, *CNN Money*, and others all agree: few other occupations offer the combination of benefits that an actuarial career can offer. To learn more about the profession, go to www.BeAnActuary.org.

Please Note: Students who read this book in PDF on a computer can click on **highlighted links** to access online resources and can mouseover **bolded terms** for a pop-up definition. All bolded terms are also defined at the start of each chapter in this teacher's guide.

It is possible that some of the online resource links provided here may be renamed or removed by their hosts in the future. A quick internet search should lead to similar online resources that can be used to complete the activities.

Facts and opinions contained on referenced web pages are the sole responsibility of the organizations expressing them and should not be attributed to The Actuarial Foundation and/or its sponsor(s).

Introduction: Money Matters

This infographic from the nationwide 2018 Consumer Financial Literacy Survey and the discussion questions below serve as a great starting point for you to assess your students' interest in and existing knowledge of topics relating to personal finance. Go through each statistic and ask students to reflect on what it means to them as an individual, and how they think it is an indicator of the financial health of our country as a whole. They should focus on their own financial futures; take care to guide them away from sharing details about their family's finances.

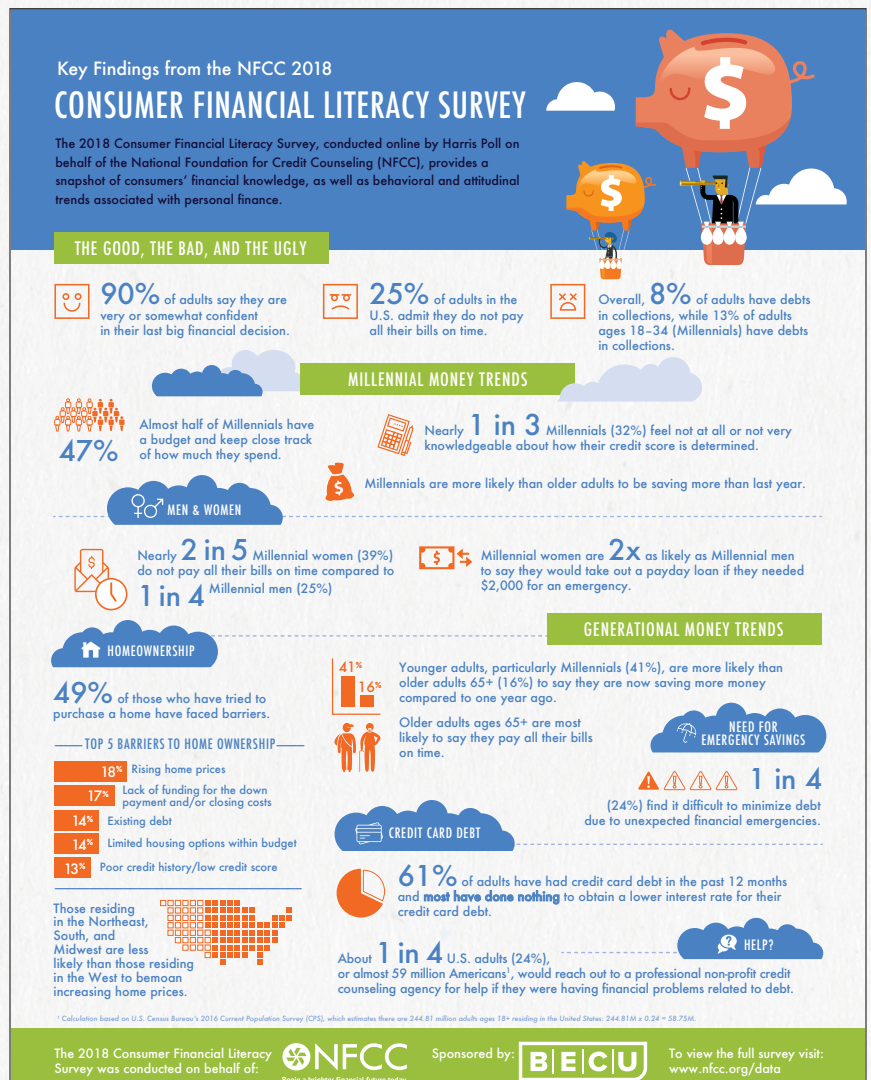
Discussion Questions

Answers will vary for each question:

- Are there any statistics that surprise you?
- How do you think these statistics compare to those of past years? Why?
- How prepared do you feel for managing your money and planning for the future?
- What do you think you need to know in order to achieve financial health?

Teaching Notes

- Each book in the *Building Your Future* program has been designed as a complete unit, with subtopics divided by chapter. The units are cumulative, meaning that it is best to start with Book 1 before teaching Book 2, etc. You can, however, skip around if certain lessons have particular relevance for your class.
- Students will need one to two class periods to complete the activities for each chapter.
- While the use of individual computers with PDF and spreadsheet software best facilitates the lesson activities, activity sheets can be completed in a number of ways, depending on the technology available to you:
 - Completed on computers with a web browser;
 - Printed as standalone pages for students to complete as pencil/paper tasks; or
 - As a class, with a digital whiteboard or projector.
- At the end of each book, we have included a Final Assessment Quiz that you can photocopy and distribute to each student to complete on his or her own.
- You can extend student learning of each book by having students write their own practice activities, using at least three of the main concepts that have been learned. Direct them to the Glossary for ideas. Students could then exchange these problem-solving activities with one another and check the final outcomes for accuracy.



CHAPTER 1: Spending Wisely



Overview

Living within your means — spending no more than you have available from your income — can be challenging. The sooner students get started practicing this essential life skill, the more successful they will be at managing their money. Understanding the difference between wants and needs, and carefully budgeting how money is spent are critical steps toward success. In this chapter, your students will begin that journey toward financial health, as they learn to set spending priorities and create a budget to plan income and expenses.

Getting Organized

- Activities are designed for students to complete independently using an internet-connected computer/tablet. Alternatively, the activities can be completed as a class using a projector or digital whiteboard, or they can be printed out for completion as worksheets.
- When the chapter is complete, provide each student with a copy of the budget template spreadsheet available at ymiclassroom.com/byf/byf_book1_budget_template.xlsx. Alternatively, you could email it or print it out for them.

Learning Objectives

Focusing on creating a budget and establishing good spending habits, students will:

- Review definitions of key terms associated with budgeting and managing money.
- Practice differentiating between wants and needs and assessing value as it relates to price.
- Work from a template to practice managing monthly spending.
- Use the included lessons to manage their own budget.

Key Terms

- **Budget:** an itemized list of income and expenses for a given period of time; a plan for spending money
- **Excise Tax:** a federal, state, or local tax placed on non-essential consumer goods
- **Expenses:** outlay of money needed to pay for items, services, etc.
- **Gross Pay:** regular pay, overtime, and other earnings paid to an employee before taxes or any other obligations are deducted
- **Needs:** basic survival necessities
- **Net Pay:** remaining income you take home after taxes and other deductions are made
- **Quality:** the standard of something as measured against other things of a similar kind
- **Sales Tax:** tax imposed by many states, counties, and cities on purchases
- **Total Cost:** amount spent on an item or activity that includes all associated expenditures
- **Unit Cost:** the price you pay for an item divided by the quantity it contains, based on a standardized measurement
- **Value:** the amount of use or benefit you get from an item
- **Wants:** items a person desires that are not essential

Teaching Strategies

1. Focus student attention by discussing the “Did You Know?” factoids. Continue with a conversation about how many students currently keep a budget and whether it has/has not been successful in helping them manage money. For students who do not, ask them about barriers that might prevent them from doing so.
2. Use techniques such as student pair/share to discuss chapter content, key terms, and the major concepts found in the chapter.

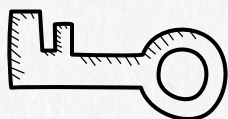
3. Throughout the chapter, some topics for discussion could include:
- How might a person's budget change over the course of his/her life? Will wants and needs vary?
 - What are some items students think would be worth buying for better quality rather than for lower cost? When are some times when buying a lower-cost, lower-quality item would be acceptable?
 - What options do you have when your needs exceed your income?

Follow-up Activity

The exercises in this chapter are designed so that teens can implement the lessons immediately in their own lives, using the downloadable budget template spreadsheet provided. Follow up at one-month and six-month intervals with a brief survey to determine:

- How many students are tracking their own spending.
- Anything they've learned or achieved in the process.
- Any questions or challenges they've encountered.

Answer Key:



Activity 1

Answers will vary. In discussion, guide students in considering the "essence" of a need vs. a want. For example, someone who lives in a major city will not "need" a car payment, but someone who lives in the country and has to drive to work will. Coffee during work breaks could also be considered a gray area, since workers usually can't go home for coffee during break times. Ask students to think of alternatives that might cost less money than purchasing cups of coffee, such as making extra coffee in the morning to carry for the day or buying a carafe to keep at their workplace.

Activity 2

PART 1: DETERMINING COSTS

Use the data below to determine the total cost of each item.

1. You purchased a new pair of shoes for \$34.99 and the sales tax rate was 7.5%.
Total cost = \$37.61
2. You purchased a bicycle for \$199.99 and the sales tax rate was 6.75%.
Total cost = \$213.49
3. You purchased 14.75 gallons of gasoline at \$2.29 per gallon. If the excise tax was 18.4 cents per gallon, what is the total amount of excise tax you paid? \$2.71
What if you had paid \$3.59 per gallon of gas? How would this affect the amount of excise tax paid?
Excise tax would stay the same.

4. You would like to go to the beach from Saturday to Sunday and stay overnight at a hotel. You already have a bathing suit and flip flops, but will need to purchase sunscreen for \$7.99 and a towel for \$12.99 (sales tax is 5%). The hotel room costs \$89, plus a 3% excise tax, and will be divided among 4 friends. You will also need to pay for 4 meals, including tips, for a total of \$60, and a beach pass for \$3 each day. If your budget is \$150, how much money will you have left over for extra activities and souvenirs?

$$\text{Purchases} = (\$12.99 + \$7.99) \times 1.05 = \$22.03$$

$$\text{Hotel} = (\$89.00 \times 1.03) \div 4 = \$22.92$$

$$\text{Beach pass} = \$3.00 \times 2 \text{ days} = \$6.00$$

$$\text{Meals} = \$60.00$$

$$\text{Combined Total Cost} = \$110.95$$

$$\$150 - \$110.95 = \$39.05 \text{ available for wants}$$

PART 2: COMPARING COSTS

1. You need a new bottle of conditioner.
Option 1: 2-pack of conditioner for \$40.00; each bottle is 16 ounces. No shipping or sales tax.
Price per bottle: $\$40.00 \div 2 = \$20.00 \div 16 \text{ ounces} = \1.25 per oz.
Option 2: Individual bottle of conditioner; 16 ounces for \$25.95.
Price per bottle: $\$25.95 \div 16 \text{ ounces} = \1.62 per oz.
Option 1 is more economical.
2. Your favorite online clothing store is offering a

membership that allows you unlimited shipping throughout the year for a one-time flat rate of \$29.99. Typically, you pay \$3.99 shipping for each purchase you make. How many orders will you need to place in order for the membership to be worthwhile?

Flat rate: \$29.99 ÷ Per-order rate: \$3.99 = Base number of orders: 7.5. It would be cheaper to pay shipping for each order if you place 7 or fewer orders per year.

- You are moving out on your own and need to buy furniture for your apartment. You found a new couch that costs \$1,500 plus 7.5% tax and \$50 shipping, or a used couch that is 5 years old, for \$700 cash without tax, and it needs about \$200 worth of repairs and cleaning. Assuming that a couch lasts 15 years, which is the more economical purchase?

New Couch: \$1,500 x .075 + 50 = \$1,662.50 ÷ 15 = \$110.83 annual cost

Used Couch: \$700 + \$200 = \$900 ÷ 10 = \$90 annual cost

The used couch is the more economical option: Assuming both couches will last a total of 15 years, the used couch has 10 years left and will cost a total of \$900, which is \$90/year. The new couch will cost a total of \$1,662.50, which comes out to \$110.83/year.

Activity 3

ESTABLISHING A PLAN

- What is the formula for calculating the ending monthly balance?
Ending Monthly Balance = Income Subtotal - Expenses Subtotal
- What would it mean if the ending monthly balance were a negative number? What could this person do to fix the problem?
If Ending Monthly Balance were a negative number, it would mean that Expenses were greater than Income. To fix the problem, this person could look to increase income by working additional hours or getting a higher-paying job. Or he/she could revisit their expenses and find ways to cut back.
- Let's say this person needs to cut \$20 in spending from their budget. Suggest two different ways to achieve this. For each suggestion, you can change up to 3 line items, as long as the net change is \$20.
Answers will vary.

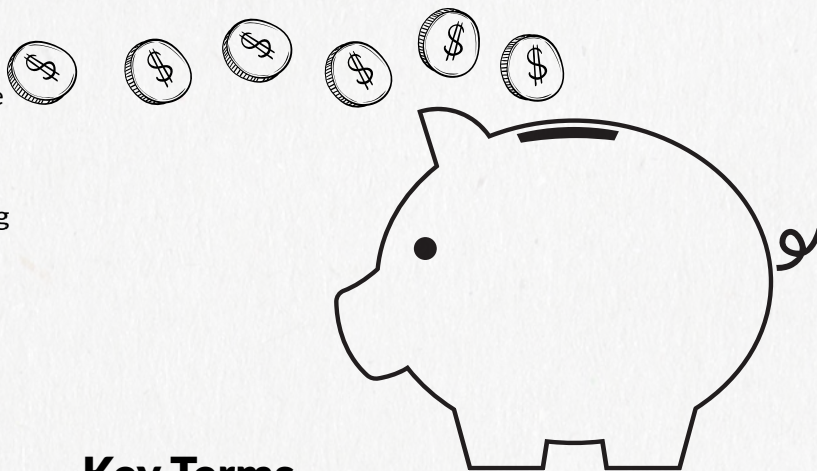
Category	Estimated Monthly Budget	Actual Monthly Budget	Difference
INCOME			
Gross Wages	\$270.00	\$280.00	\$10.00
Minus Taxes & Withholdings	-\$30.00	-\$32.00	-\$2.00
Allowance	\$25.00	\$25.00	\$0.00
Gifts & Other Income	\$0.00	\$35.00	\$35.00
Interest from Savings Account	\$5.00	\$4.00	-\$1.00
INCOME SUBTOTAL	\$270.00	\$312.00	\$42.00
EXPENSES			
Basic Living Expenses			
Phone Bill	\$30.00	\$30.00	\$0.00
Utilities	\$10.00	\$9.00	\$1.00
Groceries/Snacks	\$15.00	\$12.00	\$3.00
School			
Books	\$55.00	\$45.00	\$10.00
Class Fees/Supplies	\$15.00	\$20.00	-\$5.00
Transportation			
Gasoline	\$20.00	\$25.00	-\$5.00
Bus Pass	\$0.00	\$0.00	\$0.00
Savings			
Savings Contribution	\$10.00	\$10.00	\$0.00
Giving			
Charity	\$5.00	\$5.00	\$0.00
Gifts	\$10.00	\$10.00	\$0.00
Shopping			
Wardrobe Needs	\$40.00	\$35.00	\$5.00
Other Shopping	\$10.00	\$0.00	\$10.00
Entertainment			
Dining Out	\$15.00		\$15.00
Sports/Gym Membership			\$0.00
Music/Videos	\$5.00		\$5.00
Hobbies	\$10.00		\$10.00
EXPENSES SUBTOTAL	\$250.00	\$201.00	\$49.00
ENDING MONTHLY BALANCE	\$20.00	\$111.00	\$91.00



CHAPTER 2: Smart Saving

Overview

By saving even small amounts of money, one can build wealth slowly but steadily over time. Savings accounts are one means of putting money aside and earning interest on it. Money placed in these accounts is not intended for everyday expenses like purchasing movie tickets or buying new clothes. Instead, these accounts have the purpose of providing the individual a safe place to save money that will be used at a later date to make a major purchase such as a car, to fund a large expense such as a college education, an unexpected expense, or to invest.



Getting Organized

- Students will need one class period to complete the activities for this chapter.
- Activities are designed for students to complete independently using an internet-connected computer/tablet. Alternatively, the activities can be completed as a class using a projector or digital whiteboard, or they can be printed out for completion as worksheets.

Learning Objectives

Focusing on the use of savings accounts, students will:

- Review definitions of key terms associated with savings accounts and the process of saving.
- Calculate interest payments, ending/beginning account balances, future value, and discount factor.
- Construct savings account spreadsheets from a variety of data.
- Study the power of compound interest.
- Apply present value and future value and formulas for calculating discount factors.
- Apply the Rule of 72 to savings accounts.
- Analyze data from savings spreadsheets and draw conclusions about savings strategies.
- Use a savings account spreadsheet to determine the amount of time it will take to save the amount needed to purchase a specific item.

Key Terms

- **Account Balance:** total amount of money that is in the account at a given point in time
- **Compounding of Interest:** when money is earned on the total amount in the account, including the initial deposit and interest that has already been credited to the account
- **Deposit:** money put into an account
- **Discount Factor:** the amount that \$1 at some point in the future is worth today
- **Future Value:** how much a set amount of money will be worth in the future
- **Interest:** money paid to you by the bank for being able to use your money
- **Interest Rate:** percentage you are paid for your money
- **Investing:** the process of setting money aside to increase wealth over time and accumulate funds for long-term financial goals such as retirement
- **Present Value:** the value of money right now, today
- **Rule of 72:** a formula designed to help people estimate how long it will take to double their money at a certain expected interest rate
- **Saving:** the process of setting money aside until a future date instead of spending it today
- **Withdrawal:** money taken out of an account

Teaching Strategies

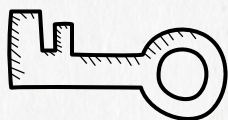
1. Focus student attention by discussing the “Did You Know?” factoids.
2. Continue by surveying the class about their savings strategies. For example, ask how many students have a savings account, how many contribute to it regularly, and how they decide what to spend vs. save. Try to avoid discussion of how much money each student has.
3. Use techniques such as student pair/share to discuss chapter content, vocabulary terms, and the major concepts found in the chapter.
4. Throughout the chapter, some topics for discussion could include:
 - How did the beginning balance grow over the course of the year?
 - Why do interest payments increase over time? Would interest payments increase faster with monthly compounding or weekly compounding?
 - How long do you think it takes to double your money over time?
 - What do you think is significant about the number 72 that makes the “Rule of 72” work?
5. At the conclusion of this chapter, students should be able to calculate compound interest using the formula: $A = P(1 + r/n)^{nt}$, where A is the ending value, P is the starting deposit, r is the interest rate, n is the frequency of compounding per term, and t is the number of terms (e.g., years). Gauge your students’ readiness, and if you find it is appropriate you can extend their learning by having them apply this formula to the activities. Alternatively, you can simplify these activities by directing them to use a free compound interest calculator such as the one at www.investor.gov/additional-resources/free-financial-planning-tools/compound-interest-calculator.



Follow-up Activities

1. To help students apply what they have learned, direct them to the Independent Practice assignment. All students should answer the question: How long will it take you to save \$5,000 for a car if you put half of your earnings into the savings account each month? There are several ways they can complete this activity: 1) by editing the spreadsheet from the “Real World Practice” activity; 2) by using the formula: $A = P(1 + r/n)^{nt}$; or, 3) by using an online calculator, such as this one from Money Chimp: www.moneychimp.com/calculator/compound_interest_calculator.htm
2. Have students research current interest rates and make a chart comparing 3-4 different options for savings accounts. Assign them to come up with a savings goal (real or imagined) and choose the best account to help them reach it; then create a spreadsheet based on the “Real World” scenario showing how they plan to manage the account with debits/credits, and how they expect the interest to compound over time.





Activity 1

PART 1: COMPOUND INTEREST

Month	Interest Rate	Beginning Balance	Interest Payment	Ending Balance
1	0.25%	\$1,000.00	\$2.50	\$1,002.50
2	0.25%	\$1,002.50	\$2.51	\$1,005.01
3	0.25%	\$1,005.01	\$2.51	\$1,007.52
4	0.25%	\$1,007.52	\$2.52	\$1,010.04
5	0.25%	\$1,010.04	\$2.53	\$1,012.56
6	0.25%	\$1,012.56	\$2.53	\$1,015.09
7	0.25%	\$1,015.09	\$2.54	\$1,017.63
8	0.25%	\$1,017.63	\$2.54	\$1,020.18
9	0.25%	\$1,020.18	\$2.55	\$1,022.73
10	0.25%	\$1,022.73	\$2.56	\$1,025.28
11	0.25%	\$1,025.28	\$2.56	\$1,027.85
12	0.25%	\$1,027.85	\$2.57	\$1,030.42
13	0.25%	\$1,030.42	\$2.58	\$1,033.00
14	0.25%	\$1,033.00	\$2.58	\$1,035.58
15	0.25%	\$1,035.58	\$2.59	\$1,038.17
16	0.25%	\$1,038.17	\$2.60	\$1,040.77
17	0.25%	\$1,040.77	\$2.60	\$1,043.37
18	0.25%	\$1,043.37	\$2.61	\$1,045.98
19	0.25%	\$1,045.98	\$2.61	\$1,048.59
20	0.25%	\$1,048.59	\$2.62	\$1,051.22
21	0.25%	\$1,051.22	\$2.63	\$1,053.85
22	0.25%	\$1,053.85	\$2.63	\$1,056.48
23	0.25%	\$1,056.48	\$2.64	\$1,059.12
24	0.25%	\$1,059.12	\$2.65	\$1,061.77
25	0.25%	\$1,061.77	\$2.65	\$1,064.42
26	0.25%	\$1,064.42	\$2.66	\$1,067.08
27	0.25%	\$1,067.08	\$2.67	\$1,069.75
28	0.25%	\$1,069.75	\$2.67	\$1,072.42
29	0.25%	\$1,072.42	\$2.68	\$1,075.10
30	0.25%	\$1,075.10	\$2.69	\$1,077.79
31	0.25%	\$1,077.79	\$2.69	\$1,080.48
32	0.25%	\$1,080.48	\$2.70	\$1,083.18
33	0.25%	\$1,083.18	\$2.71	\$1,085.89
34	0.25%	\$1,085.89	\$2.71	\$1,088.60
35	0.25%	\$1,088.60	\$2.72	\$1,091.32
36	0.25%	\$1,091.32	\$2.73	\$1,094.05

- The spreadsheet is based on the following formulas. Fill in the blanks:

- Interest Payment = Interest Rate x Beginning Balance

- Ending Balance = Beginning Balance + Interest Payment

- How would you express each of the statements above as a numerical formula for month 1 of the spreadsheet?

$$2.50 = 0.0025 \times \$1,000$$

$$\$1,002.50 = \$1,000 + \$2.50$$

- Write a mathematical formula to show why the monthly interest rate is 0.25% if the annual percentage is 3%.
 $3\% \div 12 = 0.25\%$

- How did the beginning balance grow over the course of the first year? If 3% of \$1,000 is \$30, where did the extra 42 cents come from?

The interest payments are 0.25% monthly, not just 3% annually. The extra 42 cents came from interest on the interest payments accumulating each month.

- Compare the monthly interest payments at 12 months, 24 months, and 36 months. Why do the monthly interest payments increase over time?
Interest is paid each month on the entire account balance, not just the original balance. As the account balance grows over time, your interest payments grow as well.

- How do these amounts illustrate the concept of compound interest?

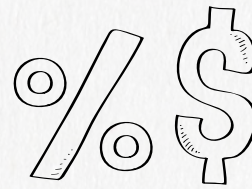
The interest payments are building on one another.

- Why would a bank choose to pay small payments over time in an amount that totals more than the 3% annual interest rate?

Answers will vary. The general idea is that this gives banks an opportunity to make more money, too, because your money stays in your account longer and they have more time to earn before having to pay.

7. What would happen if the 3% annual percentage rate was compounded daily instead of monthly? What would the ending balance be after 1 year?

$0.03 \div 365 = 0.000082$, or 0.0082%. After one year, ending balance would be \$1,030.45. In this case, it is only a slight change over monthly compounding.



Activity 1

PART 2: THE RULE OF 72

Use the Rule of 72 to practice estimating how long it will take to double your \$1,000 savings using various interest rates. If the account paid each annual interest rate listed below, how long would it take to double your savings?

- 5% 14.4 years
- 8% 9 years
- 12% 6 years
- What conclusions can you draw about how interest rates affect the value of money over time?

The higher the interest rate, the faster your money gains in value.



Activity 2

REAL WORLD PRACTICE

Month	Interest Rate	Withdrawals	Beginning Balance	Interest Payment	Deposits	Ending Balance
1	0.25%	\$0.00	\$1,000.00	\$2.50	\$320.00	\$1,322.50
2	0.25%		\$1,322.50	\$3.31	\$320.00	\$1,645.81
3	0.25%		\$1,645.81	\$4.11	\$320.00	\$1,969.92
4	0.25%	\$45.00	\$1,924.92	\$4.81	\$320.00	\$2,249.73
5	0.25%		\$2,249.73	\$5.62	\$320.00	\$2,575.35
6	0.25%		\$2,575.35	\$6.44	\$320.00	\$2,901.79
7	0.25%		\$2,901.79	\$7.25	\$370.00	\$3,279.04
8	0.25%		\$3,279.04	\$8.20	\$320.00	\$3,607.24
9	0.25%		\$3,607.24	\$9.02	\$320.00	\$3,936.26
10	0.25%	\$200.00	\$3,736.26	\$9.34	\$320.00	\$4,065.60
11	0.25%		\$4,065.60	\$10.16	\$320.00	\$4,395.76
12	0.25%		\$4,395.76	\$10.99	\$320.00	\$4,726.75

- How much money is in your savings account at the end of 12 months?
\$4,726.75
- How much interest did you earn on your money over the course of the year?
\$81.75
- Why is using a savings account better than using your dresser drawer for saving money?
Answers will vary, but main benefits are security and interest.

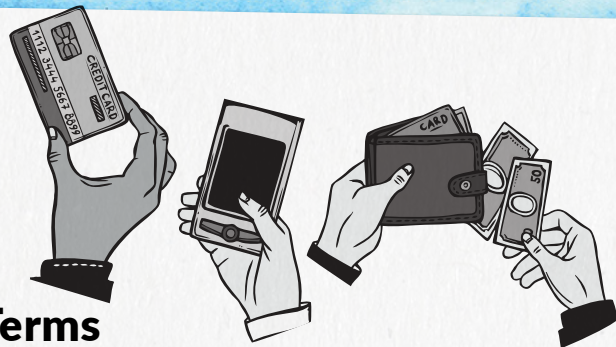
Independent Practice

It will take 14 months to save up enough to purchase the car.

Month	Interest Rate	Withdrawals	Beginning Balance	Interest Payment	Deposits	Ending Balance
1	0.27%		\$250.00	\$0.68	\$344.00	\$594.68
2	0.27%		\$594.68	\$1.61	\$344.00	\$940.29
3	0.27%		\$940.29	\$2.55	\$344.00	\$1,286.83
4	0.27%		\$1,286.83	\$3.48	\$344.00	\$1,634.32
5	0.27%		\$1,634.32	\$4.43	\$344.00	\$1,982.74
6	0.27%		\$1,982.74	\$5.37	\$344.00	\$2,332.11
7	0.27%		\$2,332.11	\$6.32	\$344.00	\$2,682.43
8	0.27%		\$2,682.43	\$7.26	\$344.00	\$3,033.69
9	0.27%		\$3,033.69	\$8.22	\$344.00	\$3,385.91
10	0.27%		\$3,385.91	\$9.17	\$344.00	\$3,739.08
11	0.27%		\$3,739.08	\$10.13	\$344.00	\$4,093.20
12	0.27%		\$4,093.20	\$11.08	\$344.00	\$4,448.29
13	0.27%		\$4,448.29	\$12.05	\$344.00	\$4,804.33
14	0.27%		\$4,804.33	\$13.01	\$344.00	\$5,161.34
15	0.27%		\$5,161.34	\$13.98	\$344.00	\$5,519.32



CHAPTER 3: Many Ways to Pay



Overview

Learning to maintain a checking account is a necessary skill to master before living independently. Today's checking accounts offer a wide range of banking options, and proper use of a checking account makes paying bills and tracking personal spending habits simple and convenient. In addition, today's marketplace offers dozens of options for paying bills and merchants from the palm of your hand. Each of these services has its own risks and benefits.

Getting Organized

- Students will need approximately one class period to complete the activities for this chapter.
- Activities are designed for students to complete independently using an internet-connected computer/tablet. Alternatively, the activities can be completed as a class using a projector or digital whiteboard, or they can be printed out for completion as worksheets.
- At the conclusion of the chapter, provide students with a copy of the Keeping Track spreadsheet available at ymiclassroom.com/byf/byf_book1_keeping_track_spreadsheet.xlsx. Alternatively, you could email it or print it out for them.

Learning Objectives

As students learn to use a checking account, they will:

- Identify questions consumers need to ask in order to select a checking account that meets their individual needs.
- Balance a checkbook and reconcile against a bank statement.
- Understand checking account responsibilities and privileges.
- Learn definitions of key terms associated with checking accounts.
- Understand and differentiate among online/mobile banking and electronic payment options.

Key Terms

- **Account Balance:** total amount of money that is in the account at a given point in time
- **Automated Teller Machine (ATM):** a machine that allows you to perform basic banking functions without the help of a teller
- **Check:** handwritten or computer-generated order specifying the amount of money to be paid and the name of the person or company who should receive the funds
- **Checking Account:** an account at a bank against which payments can be made based on available funds that are deposited by or on behalf of the account holder
- **Check Register:** a book or document in which to record the money taken out or put into a checking account. Designed for recording checks, withdrawals, and deposits, it can be updated to fit other methods of banking and spending
- **Debit Card:** a card that allows the user to withdraw money from a bank account to obtain cash or make a purchase
- **Digital Payment Service:** an app or online tool that is provided by a company independent of the bank that holds your checking account
- **Electronic Funds Transfer (EFT):** the movement of funds using computer systems, telephones, electronic terminals, or smartphones
- **Identity Theft:** stealing someone's personal, identifying information and using it to make purchases or to get other benefits
- **Minimum Balance:** the amount of money that must be kept in an account to avoid service charges, qualify for special service, or earn interest on a checking account
- **Near-Field Communications (NFC):** technology that allows two devices to "speak" to each other when they come into close range. It is the basis for services that allow one to pay with a smartphone simply by waving a device over a receiver at the register

- **Online and Mobile Banking:** allow account holders to access their account information, view transaction history, and perform a range of banking transactions on the internet or with their mobile phone
- **Overdraft Penalty:** a fee to cover the cost of processing a check drawn against insufficient funds
- **Overdraft Protection:** arrangement with the bank to cover checks drawn against insufficient funds
- **Overdrawn:** having a negative balance in a checking account
- **Personal Identification Number (PIN):** code word/number connected to a bank account or debit card; verifies the owner's identity
- **Person to Person Payments (P2P):** a type of electronic funds transfer that can be made via a mobile app or online; money is immediately sent from one person to another, often without sharing of bank account information
- **Reconcile:** comparing the register balance for a checking account to the statement balance to identify any discrepancies in account activity
- **Recurring Payment:** a transfer of money, usually to pay a bill, that is made on a regular basis. Once established, it is completely automated, with no additional input required from the account holder
- **Statement:** a summary of financial transactions that have occurred over a given period on an account held with a financial institution

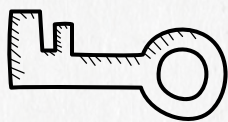


Teaching Strategies

1. Focus student attention by discussing the “Did You Know?” factoid.
2. Ask students to share what types of banking/ payment tools they have used in the past, and what they think their families use. Take a class poll to determine:
 - How many students currently have a checking account that they use on a regular basis
 - How often students typically go to a bank branch
 - Favorite banking apps and digital payment services
3. Direct students to read the chapter content and pair/share their learning with a classmate by summarizing each of the terms discussed, using their own words.
4. Facilitate a short closing discussion about checking accounts, including questions such as:
 - What are the advantages of having a checking account? Using a debit card? Using EFTs?
 - What are the disadvantages of each?
 - Based on your personal experience with checking accounts, what do you think are the most challenging aspects of having a checking account?
 - Do you think that paper checks will continue to be used, or do you believe online and smartphone banking will become the only form of checking accounts available over time? Why?

Follow-Up Activities

1. Have students research several checking account options and compare the benefits they offer. Students should create a graphic organizer such as a pro/con chart or Venn diagram to compare at least two different checking accounts. After making the comparison, students should indicate which account they would select and why.
2. Have students make a chart listing as many P2P payment services and mobile payment apps as they can find. Working as a class, fill out the benefits and risks of each service.



Activity 1

MANY WAYS TO PAY

PART 1:

1. Digital payment services require a bank account or debit card to make transactions.

True

2. Interest-bearing checking accounts are a good option for people who keep very little money in their checking account.

False

3. Prepaid debit cards offer more privacy than traditional bank-issued debit cards.

True

4. EFTs are a convenient way of paying a recurring monthly bill, such as your Spotify membership.

True

5. If you have overdraft protection, it's like having extra money in your bank account to use without penalty.

False

PART 2:

1. When you go jogging, you like to stop for coffee on your way home, but carrying a wallet is inconvenient.

A. *Smartphone Wallet App*

2. You are going on vacation with a friend's family, and your parents would like to give you spending money. They want something fast, low-risk, and with no long-term commitment.

C. *Prepaid Debit Card is safer than cash and more widely accepted than most smartphone wallet apps.*

3. You want to open a checking account and have \$1,000 to start with. Each month, you will have your paychecks, totaling \$600 or more, directly deposited into your account. You also plan on setting up automatic payments for your phone bill and cloud storage totaling \$75 per month. Choose the best checking account from the chart below.

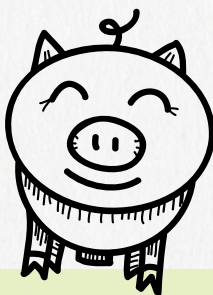
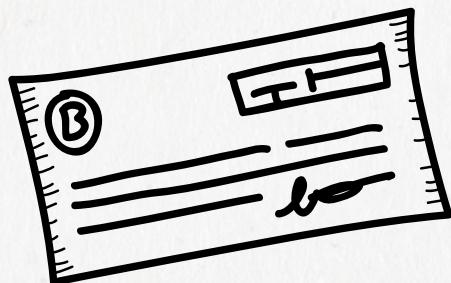
B. *Interest Checking*

4. You are opening your first checking account and have \$25 to start with. Each month, you will have your paychecks, totaling \$250, directly deposited into your account. You don't have any online bills, and pay cash for most things. There are very few banks nearby, so you expect to go frequently to ATM machines that are not owned by your bank. Choose the best checking account from the chart below.

C. *Prepaid Debit*

5. You are opening your first checking account and have \$50 to start with. Each month, you will deposit the cash you earn from babysitting, either at the ATM or the bank. You will set up online bill payment for your phone bill and gym membership. Choose the best checking account from the chart below.

A. *Basic Checking*



Activity 2

PART 1: KEEPING TRACK

- At the start of September, your checking account balance was \$143.68. During the month, your paychecks total \$105.24 and \$108.78. You also have 9 transactions totaling \$289.44. Use a calculator to fill in the missing information on this spreadsheet.

TRANS. TYPE / CHECK NUMBER	DATE	DESCRIPTION	CHECK/DEBIT AMOUNT	DEPOSIT/CREDIT AMOUNT	BALANCE
BEGINNING BALANCE					\$143.68
EFT — direct deposit	1-Sep	Paycheck		\$105.24	\$248.92
Debit	3-Sep	Gas	\$25.00		\$223.92
ATM	4-Sep	Cash Withdrawal	\$40.00		\$183.92
Debit	5-Sep	Coffee	\$4.89		\$179.03
ATM	10-Sep	Cash Withdrawal	\$40.00		\$139.03
Mobile Pay	12-Sep	Clothing Store	\$35.00		\$104.03
EFT — direct deposit	15-Sep	Paycheck		\$108.78	\$212.81
Debit	16-Sep	Concert tickets	\$41.56		\$171.25
EFT — auto pay	16-Sep	Music Club Monthly Fee	\$9.99		\$161.26
Debit	25-Sep	Dinner Out	\$68.00		\$93.26
ATM	25-Sep	Cash Withdrawal	\$25.00		\$68.26

- Reconcile the check register with the bank statement. *The bank statement incorrectly lists the clothing store debit twice.*

PART 2: OVERDRAWN!

- What do you think will happen when the bank processes your EFT payment?

It will overdraw your account.

What are some possible consequences of your failure to record the debit? Try to list three possibilities.

Answers will vary. Essentially, banks can pay or deny the charge; they will likely charge a fee if they pay the charge and, if they deny it, the phone company will likely charge a fee. You could also borrow money to cover the upcoming debit.

- You need to put gas in your car to get to school, so you charge \$23 to your debit card. What is your balance now?
 $\$48.12 - \$23.00 = \$25.12$ balance



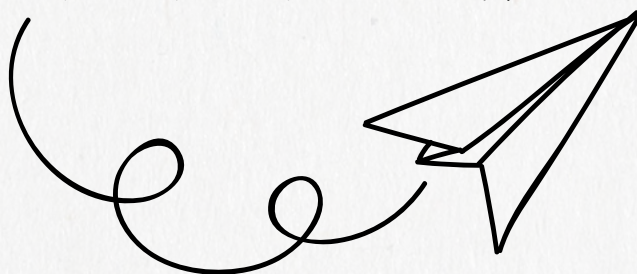
The next day, the bank sends your scheduled payment to the cell phone company. What is your balance after that payment goes through?

$\$25.12 - \$62.00 = \$-36.88 - \30.00 fee =
 $\$-66.88$ balance

Finally, your school's PTA attempts to deposit a \$10 check that you wrote at last month's bake sale and forgot to put in your register. What will happen?
The \$10 check would put you over the bank's \$75 overdraft limit, so the bank will return the check and charge you a \$15 fee.

What is your account balance now?
 $\$-66.88 - \15.00 fee = $\$-81.88$ balance

How much have you paid in overdraft fees?
 $\$30.00 + \$15.00 = \$45.00$ in overdraft fees



CHAPTER 4: Credit Cards



Overview

Many consumers are bombarded with credit card advertisements from the day they turn 18. Understanding the risks and benefits of credit cards, and using that knowledge to make informed spending decisions, is one important key to maintaining good financial health.

Getting Organized

- Students will need approximately one class period to complete the activities for this chapter.
- Activities are designed for students to complete independently using an internet-connected computer/tablet. Alternatively, the activities can be completed as a class using a projector or digital whiteboard, or they can be printed out for completion as worksheets.
- These activities require internet access or the use of calculators.

Learning Objectives

As students learn about credit cards, they will:

- Discuss key terms associated with credit cards and making purchases using credit.
- Describe the pros and cons of making purchases using credit cards.
- Practice calculating minimum payments, average daily balances, and daily finance charges.
- Evaluate and interpret a sample credit card statement.
- Analyze spreadsheet data to draw conclusions about the true cost of using credit for purchases.
- Consider how to select credit cards based on individual spending habits and consumer needs.



Key Terms

- **Annual Fee:** the amount of money the credit card issuer charges for having the credit card account each year
- **Annual Percentage Rate:** the yearly interest rate paid on the credit card balance
- **Average Daily Balance:** the average amount owed on the credit card for each day of the billing cycle, calculated by adding up each day's ending balance and then dividing by the total number of days
- **Cash Advance:** a short-term loan provided by a credit card issuer in the form of cash through the use of an ATM or bank
- **Charge:** monies borrowed using a credit card
- **Credit:** the ability to make purchases with the promise that the money will be repaid later
- **Credit Card:** a card that allows the cardholder to repeatedly purchase products and services on credit. Most credit cards have credit limits and monthly minimum payments, but users are allowed to carry an outstanding balance from month to month
- **Credit Limit:** the maximum amount of money that the credit card issuer will allow you to charge
- **Daily Finance Charge:** the interest rate you pay each day on the outstanding balance
- **Finance Charge:** the interest payment owed on the credit card balance
- **Interest Rate:** the percentage paid on the money one has charged
- **Late Fee:** a penalty charged for not making the required minimum payment by the due date
- **Minimum Payment:** the least amount one can pay on the card and still keep your account in good standing; typically, a percentage of the outstanding balance or some pre-set minimal amount if the balance is low

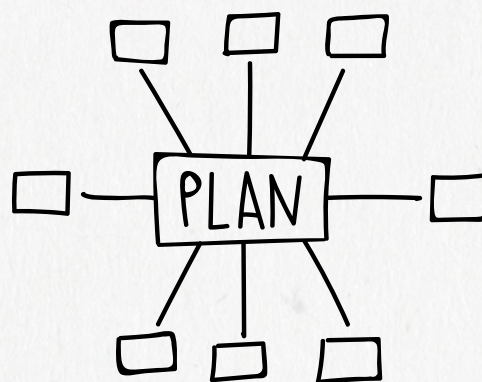
- **Outstanding Balance:** the amount of money that has been charged and must be repaid
- **Payment Due Date:** the date by which the credit card company expects to receive payment

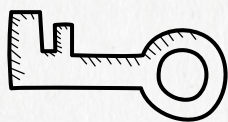
Teaching Strategies

1. Discuss the "Did You Know?" factoid and ask:
 - How would you feel if you owed that much money?
 - Do you think that using a credit card is a good or bad thing? Why?
2. Discuss the positive and negative aspects of using a credit card. Work as a class to list what students already know about the pros and cons of using credit.
3. Discuss how credit card companies make their money, and how that relates to the way they market their services.
4. Direct students to complete the Putting It All Together activity as a homework assignment. You can review with the class upon completion (see the answer key that follows for support). Discuss the following questions related to the assignment:
 - Based on what you have learned about using credit cards, is it wise to purchase the gaming system and games using a credit card? Explain your answer.
 - If you had the opportunity to purchase something you really wanted using a credit card vs. waiting until you saved the money needed to make the purchase, which option would you choose? Explain why.
 - As a class, refer back to your credit "pros and cons" lists and see if you would change or add to either the pros or cons. Select volunteers to explain why these changes should be made using examples from what they learned.

Follow-Up Activities

1. Show students a credit card offer. Review what information it contains, and what information may be vague or missing. Evaluate the benefits and risks of the particular offer. Ask: Why do you think credit card companies are so eager to issue cards to so many people, particularly young consumers?
2. After reading the "Credit Card Basics" section, ask students to research credit card interest rates and ask, "What is a typical interest rate for a credit card?" As a class, discuss how credit card interest rates compare to savings interest rates.
3. Assign students to research the Credit Card Accountability, Responsibility and Disclosure, or Credit CARD Act of 2009 and other consumer credit policies implemented after the banking crisis in 2008. Ask them to create a graphic organizer or presentation highlighting the background reasons for these reforms, their goals, and whether or not they have been successful.
4. Invite a speaker from a consumer credit service to come in to speak to the class about the use of credit by young people (under age 25). Ask the speaker to identify common mistakes young consumers make when using credit and offer students tips about avoiding the pitfalls of credit.





Activity 1

PART 1: READING YOUR STATEMENT

- A. *Outstanding balance*: total amount of money you owe; it helps determine the finance charge you will pay.
- B. *Minimum payment due*: based on a percentage of the total balance, this is the least amount you can pay to keep your account in good standing.
- C. *Payment due date*: date by which the credit card company must receive your payment.
- D. *Daily finance charge rate*: interest rate you pay each day on the outstanding balance.
- E. *Annual fee*: the amount of money the credit card issuer charges you each year for having the credit card account.
- F. *This month's activity*: a brief history showing purchases made with the credit card since the last statement.
- G. *Annual percentage rate*: yearly interest rate you pay on the outstanding balance.
- H. *Finance charges*: interest payment charged to you for the statement period.
- I. *Late fee*: a penalty you are charged for not making your minimum payment by the established payment due date.
- J. *Cash advances*: money you obtain in the form of cash through the use of an ATM or bank.
- K. *Payments*: the amount you paid on the last credit card statement you received and any other payments you may have made since the last statement.
- L. *Cash advance limit*: the total amount of money you are allowed to take from the account in the form of cash and have outstanding at any point in time.

PART 2: FIGURING FINANCE CHARGES

The finance charge is an interest payment that is compounded daily, based on your average daily balance. This is calculated by adding together the ending balance for each day in the billing period (even the days that your balance didn't change), and then dividing by the total number of days. Use the data in the sample statement in Part 1 to calculate the average daily balance for June.

Sum of ending daily balances: $\$13,980 \div 30 = \466 Average Daily Balance

Calculate the finance charge.

1. Find the annual percentage rate:
12%
2. Divide by 365 to get a daily percentage rate:
 $0.12 \div 365 = 0.0003287$ daily percentage rate
3. Finance Charge = Daily Percentage Rate x Days in Billing Period x Average Daily Balance
 $\$4.60 = 0.0003287 \times 30 \times 466$

Date	Daily Balance
1-Jun	\$390.00
2-Jun	\$390.00
3-Jun	\$390.00
4-Jun	\$390.00
5-Jun	\$415.00
6-Jun	\$415.00
7-Jun	\$415.00
8-Jun	\$415.00
9-Jun	\$460.00
10-Jun	\$460.00
11-Jun	\$460.00
12-Jun	\$460.00
13-Jun	\$460.00
14-Jun	\$460.00
15-Jun	\$460.00
16-Jun	\$565.00
17-Jun	\$565.00
18-Jun	\$565.00
19-Jun	\$565.00
20-Jun	\$565.00
21-Jun	\$565.00
22-Jun	\$565.00
23-Jun	\$565.00
24-Jun	\$425.00
25-Jun	\$425.00
26-Jun	\$425.00
27-Jun	\$425.00
28-Jun	\$440.00
29-Jun	\$440.00
30-Jun	\$440.00
Total	\$13,980.00
	$\div 30$
ADB	\$466.00



MINIMUMS MATTER

Use the data in the sample statement to calculate the minimum payment percentage for this account.

Minimum Payment: $\$6.60 \div \text{Outstanding Balance: } \$444.60 = 1.48\%$ Minimum Payment Percentage

PART 3: EXTRA PRACTICE

Use this data to answer the questions below.

• CREDIT CARD A:

- Annual percentage rate = 22.99%
- 30-day billing period
- \$22,640 total daily account balance
- \$700 statement balance
- Minimum payment – 2% or \$15, whichever is greater

• CREDIT CARD B:

- Annual percentage rate = 18.5%
- 31-day billing period
- \$9,200 total daily account balance
- \$275 statement balance
- Minimum payment – 2% or \$10, whichever is greater

1. Calculate the daily finance charge rate.

- Card A: 0.0630%
- Card B: 0.0507%

2. Calculate the average daily balance for each account.

- Card A: \$754.67
- Card B: \$296.77

3. Calculate the minimum payment on each account.

- Card A: \$15
- Card B: \$10

4. For each account, use the online payoff calculator at www.creditcards.com/calculators/payoff to determine how long it will take to pay off the balance. (Keep Monthly Charges at zero.) How long will it take to pay off the balances if you only pay the minimum payment? How much money would you have to pay each month in order to pay off the total debt in 6 months?

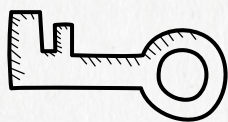
- Card A: Minimum payment (\$15 per month) payoff in 119 months; 6 month payoff at \$124.61 per month
- Card B: Minimum payment (\$10 per month) payoff in 37 months; 6 month payoff at \$48.34 per month

Take-Home Lesson

PUTTING IT ALL TOGETHER

1. For the first month, what will be the finance charge: \$5.96, minimum payment: \$11.38
2. How long will it take you to pay off the credit card balance if you make only minimum monthly payments? 49 months (using minimum payment calculator)
3. If you make only minimum monthly payments, what will the total cost of the purchase be once you have paid it off? $\$325 + 165.91 = \490.91
4. How much of this amount will you have paid in interest? \$165.91
5. If you make a payment of \$50 per month, what happens to the overall cost of the item? It decreases.
6. How long will it take you to pay it off? 7 months
7. How much will you pay in interest using this scenario? \$24.22
8. Based on what you have learned, is it wise to purchase the gaming system and games using a credit card? Explain your answer.
Answers will vary, depending on students' comfort with risk and how much they are willing to spend in order to get something they want now.
9. If you had the opportunity to purchase something you really wanted using a credit card vs. waiting until you saved the money needed to make the purchase, which option would you choose? Explain your answer.
Answers will vary.





Final Assessment Quiz

You earn \$150/month and have the following expenses:

- \$15/week – eating out
- \$40/month – gym
- \$60/month – phone bill

1. Assuming there are 4 weeks in a month, how do your expenses compare to your income?
 - A. Expenses are higher.
 - B. Income is higher.
 - C. They are the same.
 - A. Expenses are \$160.00, which is higher than \$150.
2. You'd like to put \$25/month into savings. Which of the following is a "want" that you could cut back on?
 - A. Gym membership
 - B. Eating out
 - C. Both are wants.
 - C. While exercising and eating are both necessities, you can choose to participate in a free activity, such as walking or jogging, and to make food at home for a great cost reduction.
3. The best tool for budgeting is:
 - A. Financial management app
 - B. Pencil and paper
 - C. Spreadsheet software
 - D. Any system that you'll use
 - D. Any system that you'll use. The ideal system for budgeting is the one that fits your particular situation and habits.

You are opening a savings account with \$100 and have two options: Option 1 pays 4.8% annual interest, compounded monthly. Option 2 pays 5% annual interest, compounded annually. Use this data to answer these questions

4. If you don't plan on adding to the initial deposit, which account is the better choice?
 - A. Option 1
 - B. Option 2
 - C. Both are the same.
 - B. Option 2
5. If you plan to deposit \$50/month, which account is the better choice?
 - A. Option 1
 - B. Option 2
 - C. Both are the same.
 - A. Option 1

NOTE: These questions are a bit of a trick. Even though Option 1 compounds monthly, the total interest paid over the course of the first year is lower because the interest rate is lower. But, once you start making regular deposits, the deposits earn interest faster and more often.
6. Which of these compounding methods will grow your savings balance the quickest?
 - A. Daily compounding
 - B. Monthly compounding
 - C. Quarterly compounding
 - A. The more frequently the interest compounds, the faster it will increase.

You open a checking account with \$50 and set up your \$200 paychecks to be directly deposited on the 1st and 15th of each month. You also set up recurring monthly payments to a music service for \$9.99 and cloud storage for \$1.99. For most purchases, you use your debit card or cardless payment system on your smartphone; you go to the ATM for cash about once per week, and you're not very good at managing your budget, so you overdraw a few times a year.

7. Which would you choose?

- A. Bank A – pays 2% interest with minimum balance of \$500; charges \$10/month fee if balance is below \$500; \$34 each time you overdraw
- B. Bank B – no interest; \$10 monthly fee waived for at least 2 EFTs per month; no overdraft fee, but checks are returned unpaid if you don't have enough funds
- C. Bank C – 1% interest, \$5 monthly fee waived for direct deposit; overdraft fee is \$10 and they won't charge for subsequent overdrafts that occur on the same day

Answers will vary. Bank B is the more responsible choice, but Bank C might work better for some people until they can better manage their finances.

8. What are the major differences between internet-based checking accounts and brick-and-mortar banks?

- A. Internet banks tend to charge lower fees.
 - B. Internet banks don't usually have their own ATMs.
 - C. They are very similar.
 - D. All of the above.
- D. All of the above. Internet banks have lower overhead costs, so they can charge less and pay higher interest. They don't have their own ATMs but often partner with regional ATMs that you can use for free. Otherwise, they are very similar.*



You want to open a new credit card: Option A charges 18% interest. Option B charges 0% interest for the first 6 months, and 22% interest for every month after that. You can afford to pay \$50 a month toward your credit card debt. Use the online payoff calculator at www.creditcards.com/calculators/payoff to answer the questions.

9. If you spend \$500 on a new phone, which card will take longer to pay off?

- A. Option A
- B. Option B
- C. It will take the same amount of time.
- C. *It will take 11 months to pay off either card at \$50 per month. (Note: Because Option B offers six months interest-free, its effective interest rate for the first 12 months is 11%.)*

10. In which case will you pay less interest?

- A. Option A
- B. Option B
- C. Interest would be equal.
- B. *With Option A you will pay \$45.81 in interest; with Option B, you will only pay \$26.88 in interest.*



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: SPENDING WISELY

The Mint — Financial planning for teens

www.themint.org/teens/keep-a-money-diary.html

CHAPTER 2: SMART SAVING

MoneyChimp — General Information and Calculator on Compound Interest

www.moneychimp.com/calculator/compound_interest_calculator.htm

CHAPTER 3: MANY WAYS TO PAY

The Balance — “Checking Accounts: Your Spending Money”

www.thebalance.com/checking-accounts-your-spending-money-315326

Federal Reserve — 2016 research into consumer use of online and mobile banking options

www.federalreserve.gov/consumerscommunities/mobile_finance.htm

CHAPTER 4: CREDIT CARDS

Center for Responsible Lending — Provides general information about credit cards along with tools and resources for credit card use

www.responsiblelending.org/issues/credit-prepaid-cards

Bankrate — Provides a number of online calculators, including a credit card payoff calculator

www.bankrate.com/calculators/credit-cards/credit-card-payoff-calculator.aspx

CreditCards.com — Credit card comparison site that offers an easy-to-use minimum payment calculator

www.creditcards.com/calculators/minimum-payment

