Lesson 3

Save and Invest—Put It in the Bank

Lesson Description

In this lesson, students will compare two savings plans: stuffing a mattress with money and using a bank. After identifying the disadvantages of stuffing a mattress, students will examine how a bank acts as a financial intermediary between borrowers and savers. Students will compare four types of accounts offered by commercial banks and discuss the differences between them. Using a sample bank statement, students will find mistakes and irregularities that might occur on a bank statement. After looking at other incentives for banking, including safety and convenience, students will compare simple and compound interest and use the rule of 72 to estimate the time it takes money to double.

National Standards in K–12 Personal Finance Education (www.jumpstart.org)

Saving and Investing
Standard 1: Discuss how saving contributes to financial well-being.

Instructional Objectives

Students will:

- Describe the benefits of using a bank.
- Evaluate the role of banks as financial intermediaries between savers and borrowers.
- Compare various accounts offered by commercial banks.
- Reconcile a bank statement using a ledger.
- Define and describe interest.
- Compare growth of savings using simple and compound interest.
- Use the rule of 72 to estimate the time required for savings to double in value.

Time Required

One 50-minute class period

Materials Required

- SmartBoard (optional) *If using a computer and projector, please click when procedure says touch.*
- Interactive PDF file
- Copies of Handout 1: Bank Statement
- Copies of Handout 2: Thinking About Banks Copies of Handout 3: Interest

Warning

The first time you teach the lesson, save a master copy to your computer or a flash drive. If you do not, you will not be able to save notes from each class. Before each class, reload the master copy of the notebook file to be certain that all of the elements on each page are ready for use.

Procedure

1. **Display Slide 1.** Tell students the topic of the lesson is banking.

2. **Display Slide 2.** Review the instructional objectives for the lesson.

3. **Display Slide 3.** Use the graphics on the slide and the information below to introduce students to the distinction between saving money and saving to invest.
   - Ask students if both icons represent saving?
   - Explain that both are saving, or running a monthly budget surplus.
   - Remind students this is the first step to building wealth—budgeting to save.
   - The second step is saving to invest.

4. **Display Slide 4.** Use the brainstorming space on the slide to lead a discussion about why people should not just stuff their mattresses with money.
   - Student answers will vary but should include: mattresses are not a secure method of storage, they do not pay a saver anything, and accessing your money, if you are not at home, is not very convenient.
   - Tell students that mattresses full of money are full of idle money. While one person is saving in a mattress, no one is benefiting from being able to borrow.

5. **Display Slide 5.** Use the graphic on the screen to tell students that when money is saved, or not actively consumed, there is an opportunity for it to be loaned to someone who would like to use it immediately.

   The act of bringing together savers, who have excess money, and borrowers, who are currently short on money, is carried out by banks. In acting as a financial intermediary, banks allow savers to become investors and turn their asset into a wealth-building asset.
   - Use the arrows on the graphic to explain that savers put their money in the bank.
   - Ask what a bank gives a saver in return for depositing money?
   - In many cases, a bank provides a saver with interest for being willing to deposit money.
   - Interest is the payment made to a saver (or lender) by a borrower for allowing the use of their money. Interest is a cost to borrowers and income to savers.
   - When borrowers get a loan from the bank, they are borrowing from savers.
   - Remind students that the bank's role in this case is one of a financial intermediary.
   - Ask students what a borrower gives the bank in return for a loan?
   - Borrowers pay the bank interest based on the amount and terms of the loan they receive.
   - Explain that for facilitating this transaction, banks charge an interest rate to borrowers that is higher than the rate they pay savers.
   - The spread, or difference between the rate banks charge borrowers and pay savers, is the banks' profit.

6. **Display Slide 6.** Use the Flash application on the slide to help students understand different types of bank accounts that banks offer their clients.
   - Have a student (or students) come to the board, read a description of a bank account and then drag and drop the type of account onto the definition.
   - If the student is correct, the account name will lock in above the title and a green check mark will be displayed.
   - If the student is incorrect, a red X will display and the bank account name will reset to the original position.
   - After all the names are placed, lead a discussion about the differences between the accounts. Use the information below to facilitate the discussion.

- **Savings accounts** are for people who want to keep their money in a safe place and earn interest at the same time. You don't need a lot of money to open a savings account, and you can withdraw your money easily. You can make deposits and withdrawals but usually can't write checks. The bank usually pays an interest rate that's higher than a checking account but lower than a money market account or CD. Many people use it as a place to keep emergency cash since access to cash is easily available. Some savings accounts charge a fee if your balance falls below a specified minimum.
- **Certificates of deposit (CDs)** are savings deposits that are sometimes called "time deposits" because you are required to keep a certain amount of money in the bank for a fixed period of time (for example: $1,000 for two years). Because your money will be inaccessible for the period of time you have agreed upon, you are rewarded with a higher interest rate. The longer you agree for the bank to hold your money, the higher the rate you will receive. There is usually a penalty if you withdraw your money early, so don't select this option if you think you might need the money before the maturity date (the time period you have agreed upon) is over.
- **Checking accounts** offer safety and convenience. You keep your money in the account and write a check, use a debit card or access your account online when you want to pay a bill or transfer some of your money to someone else. If your checkbook or debit card is lost or stolen, you can cancel the debit card or close your account and open a new one so that nobody can use your old account information. (When cash is lost or stolen, you rarely see it again.) Another attractive feature of a checking account is that your bank sends you a monthly record of the checks you have written, and you can use that record if you ever need to prove that you've made a payment. Banks sometimes charge a fee for checking accounts because processing transactions can be costly. Many banks also offer no-fee checking and checking accounts that earn interest if you agree to keep a certain amount of money—a minimum balance—in the account. But these accounts are limited to nonbusiness customers. Banking laws almost always require businesses to use regular checking accounts that do not pay interest.
- **Money market deposit accounts (MMDAs)** are similar to checking accounts that earn interest, except that they usually pay a higher rate of interest and require a higher minimum balance (often $2,500 or more). They also limit the number of checks you can write per month.

7. **Display Slide 7.** Give students a copy of Handout 1: Bank Statement and use the graphic on the slide to explain to students that savers who utilize banks are still responsible for tracking their money. It is important to reconcile, or verify the accuracy of, all transactions on a bank statement.
   - Have students read the transactions for the two sample accounts, checking and savings, and circle any mistakes.
   - After students have worked independently, ask students to identify the mistakes as a class.

8. **Display Slide 8.** Use graphics on the slide and the information below to discuss the incentives for savers to put money in the bank.
   - Point to the dollar bill.
   - Explain that when a saver puts money in the bank, the bank pays interest to the saver.
   - Point to the hard hat.
   - Explain that additionally, banks offer safety to savers that they do not have in a mattress.
   - Banks have infrastructure in place to protect against theft.
   - Banks have access to insurance through the Federal Deposit Insurance Corporation (FDIC) that protects savers against loss in the event that a bank goes out of business.
   - Point to the debit card.

- Explain that banks also offer convenience. It is often unwieldy and sometimes impossible to carry the currency necessary to meet financial obligations. Banks offer convenient ways for consumers to use their money without physical currency.

9. **Display Slide 9.** Use the chart on the slide and the information below to discuss how the FDIC provides depositors with protection.
    - The FDIC is an independent agency of the U.S. government and is backed by the full faith and credit of the federal government.
    - FDIC protects against the loss of insured deposits if an FDIC-insured bank or savings association fails. No depositor has ever lost a single penny of FDIC-insured funds.
    - FDIC insurance covers funds in deposit accounts, including checking and savings accounts, money market deposit accounts and CDs.
    - FDIC insurance does not cover other financial products and services that insured banks may offer, such as stocks, bonds, mutual fund shares, life insurance policies, annuities or municipal securities.
    - Give students time to look over the chart explaining the FDIC coverage limits of various types of accounts.

10. **Display Slide 10.** Use the graphics on the slide to lead a discussion about the conveniences banks offer their clients.
    - Ask students what are some conveniences that banks offer to their customers?
    - Answers will vary but might include debit cards, checks, electronic payments, direct deposit, check cashing, Internet banking and smart phone applications.

11. **Display Slide 11.** Remind students that interest is what banks pay savers for being willing to let the banks lend their money to borrowers.
    - Ask students how the rate of interest impacts the amount the saver is paid.
    - Higher rate, higher return.
    - Explain that, in general, the longer a saver is willing to commit to saving, the higher the interest they will receive from the bank.

12. **Display Slide 12.** Use the space provided to list the differences between simple and compound interest.
    - Ask students to give characteristics of simple interest. Use the space provided to gather important concepts from student responses.
      - Sample responses should include:
        1. Level payments for the life of the loan.
        2. Calculated based on the principal amount and the interest rate.
    - Ask student to give characteristics of compound interest. Use the space provided to gather important concepts from student responses.
      - Sample responses should include:
        Increasing payments over the life of the loan.
        1. Calculated each year based on the principal plus the interest accrued in the previous years.
        2. The amount of money savers have grows more quickly when they receive compound interest.

13. **Display Slide 13.** Use the Flash application on the slide to demonstrate the power of compound interest over the life of a loan.

   - Press "Simple" for simple interest and choose a rate of return, 1–10 percent.
   - Use the chart to explain that the level payments of simple interest mean that investors receive the same amount ($1–$10 respectively) each year for the life of the loan.
   - Choose a few different interest rates to ensure that students understand that the percent payout stated in a simple interest calculation is multiplied by the initial principal and then paid annually.
   - Press "Compound" to display the compound rate of return alongside the simple rate of return.
   - Use the chart to display the difference between the two types of interest over the time it is paid.
   - Use a few different interest rates to show how the greater the interest rate, the greater the disparity between the two rates in terms of the dollars.
   - Explain that the interest payments paid out in a compound interest calculation are calculated by multiplying the interest rate by the initial principal plus the interest paid in all previous years.

14. **Display Slide 14.** Use the information on the slide to introduce the rule of 72 as a means to estimate the amount of time it takes money to double given a compound rate of interest.
   - Explain that the time it takes for money to double can be estimated by dividing the number 72 by the rate of interest (expressed as a percentage).
   - Discuss a few examples. Ask student how long an 8% and 12% rate would take to double.
   - 7 2/8% = 9 years to double (approximately)
   - 7 2/12% = 6 years to double (approximately)

15. **Display Slide 15.** Use the graphic on the board to review that budgeting to save is the first step in the process of building wealth. When savers begin to seek a return, through the interest paid by banks, they take the next step in wealth building—budgeting to save.

Closure
Review the concepts of this lesson using the following questions:
1. Define "interest" in your own words.
   Student answers will vary but should include some of the following ideas:
   - *Interest is the price paid to use someone else's money.*
   - *Interest is the payment received if someone else uses your money.*
   - *Interest is paid to a saver in return for giving up consumption in the present.*
   - *Interest is paid by a borrower because he or she is consuming before income has been earned.*

2. Why do savers demand interest?
   Savers want to be compensated for forgone consumption.

3. Why does a saver earn more with compound interest than with simple interest?
   Interest is paid on accumulated interest, not just on the original deposit.

4. What benefits, other than interest paid, do banks offer?
   Banks offer safety through infrastructure and the FDIC, and they offer convenience through services such as debit cards and Internet banking.

5. How can a saver use the Rule of 72?
   A saver can estimate the time required for savings to double in value at a given interest rate.

6. What are four types of accounts that banks typically offer? Describe each of them.

*a. **Savings accounts*** *are for people who want to keep their money in a safe place and earn interest at the same time. You don't need a lot of money to open a savings account, and you can withdraw your money easily. You can make deposits and withdrawals but usually can't write checks. The bank usually pays an interest rate that's higher than a checking account but lower than a money market account or CD. Many people use it as a place to keep emergency cash since access to cash is easily available. Some savings accounts charge a fee if your balance falls below a specified minimum.*

*b. **Certificates of deposit (CDs)*** *are savings deposits that are sometimes called "time deposits" because you are required to keep a certain amount of money in the bank for a fixed period of time (for example: $1,000 for two years). Because your money will be inaccessible for the period of time you have agreed upon, you are rewarded with a higher interest rate. The longer you agree for the bank to hold your money, the higher the rate you will receive. There is usually a penalty if you withdraw your money early, so don't select this option if you think you might need the money before the maturity date (the time period you have agreed upon) is over.*

*c. **Checking accounts*** *offer safety and convenience. You keep your money in the account and write a check, use a debit card or access your account online when you want to pay a bill or transfer some of your money to some- one else. If your checkbook or debit card is lost or stolen, you can cancel the debit card or close your account and open a new one so that nobody can use your old account information. (When cash is lost or stolen, you rarely see it again.) Another attractive feature of a checking account is that your bank sends you a monthly record of the checks you have written, and you can use that record if you ever need to prove that you've made a payment. Banks sometimes charge a fee for checking accounts because processing transactions can be costly. Many banks also of- fer no-fee checking and checking accounts that earn interest if you agree to keep a certain amount of money—a minimum balance—in the account. But these accounts are limited to nonbusiness customers. Banking laws almost always require businesses to use regular checking accounts that do not pay interest.*

*d. **Money market deposit accounts (MMDAs)*** *are similar to checking accounts that earn interest, except that they usually pay a higher rate of interest and require a higher minimum balance (often $2,500 or more). They also limit the number of checks you can write per month.*

Assessment

Distribute Handout 2: Thinking About Banks and Handout 3: Interest, and have students complete independently.

Name _____   Date _____

Handout 1: **Bank Statement**

BW Bank

Sonya's Statement May 2014

Checking Account xxxx-3476

Posting	Transaction Type	Amount	Balance
1-May	Beginning Balance	$	$ 355.25
7-May	Debit Card: BW Movie Lights 17	−15.65	$ 339.60
7-May	Debit Card: BW Pump & Go, LLC	−45.50	294.08
11-May	Direct Deposit BW Greasy Spoon, LLC	356.28	650.36
11-May	ACH Payment: Automobile Insurance Company of Building Wealthopolis	−125.18	525.18
14-May	Debit Card: BW Pump & Go, LLC	−44.66	480.52
14-May	Internet Transfer to Savings Ending in 7762	−100.00	380.52
21-May	Check #1347	−81.16	299.36
21-May	Debit Card: Wealth Builders Fine Dining, LP	−35.16	264.20
21-May	Debit Card: BW Special Occasions Floral Designs	−25.24	238.96
24-May	Check #1347	−81.16	157.80
25-May	Direct Deposit BW Greasy Spoon, LLC	356.28	514.08
28-May	Internet Transfer to Savings Ending in 7762	−100.00	414.08
28-May	ACH Payment: Wealthopolis Wireless	−62.89	351.19
30-May	Debit Card: BW Pump & Go, LLC	−45.15	306.04
31-May	Check # 1348	−81.16	224.88
31-May	Monthly Maintenance Fee	−12.00	212.88
31-May	Ending Balance		212.88

Savings Account xxxx-7762

Posting	Transaction Type	Amount	Balance
1-May	Beginning Balance	$	$ 450.00
14-May	Internet Transfer from Checking Ending in 3476	100.00	$ 550.00
31-May	Interest Payment @ .85% annual	0.39	550.39
			550.39

Suggested Answers

Handout 1: **Bank Statement**

BW Bank

Sonya's Statement May 2014

Checking Account xxxx-3476

Posting	Transaction Type	Amount	Balance
1-May	Beginning Balance	$	$ 355.25
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31-May	Ending Balance		212.88

Savings Account xxxx-7762

1-May	Beginning Balance	$	$ 450.00
14-May	Internet Transfer from Checking Ending in 3476	100.00	$ 550.00
31-May	Interest Payment @ .85% annual	0.39	550.39
			550.39

Name _____   Date _____

Handout 2: **Thinking about Banks**

1. Use information from Handout 1: Banking Basics to complete the table below.

How do banks and other financial institutions serve savers?	How do banks and other financial institutions serve borrowers?

2. Use the terms below to complete this flowchart, labeling all boxes and arrows.
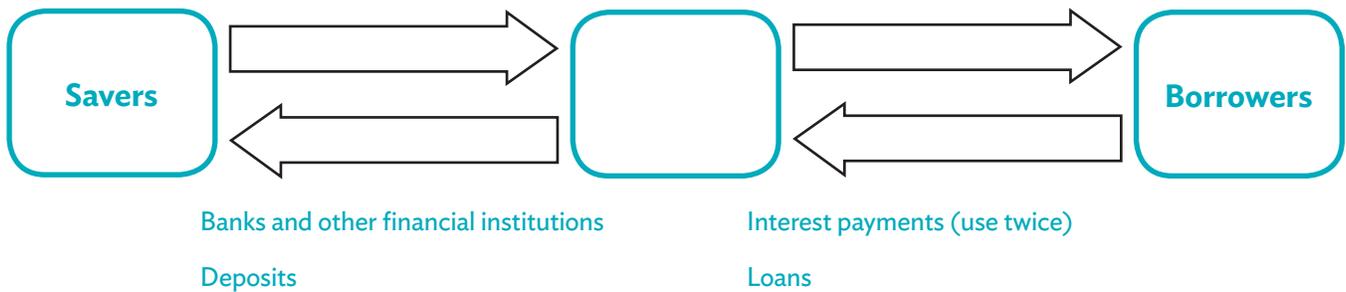
Savers → ← [ ] → ← **Borrowers**

Banks and other financial institutions   Interest payments (use twice)

Deposits   Loans

3. How does the riskiness of a loan affect the interest charges that a borrower must pay? Explain your answer.

4. What factors should a saver consider when choosing an account at a bank?
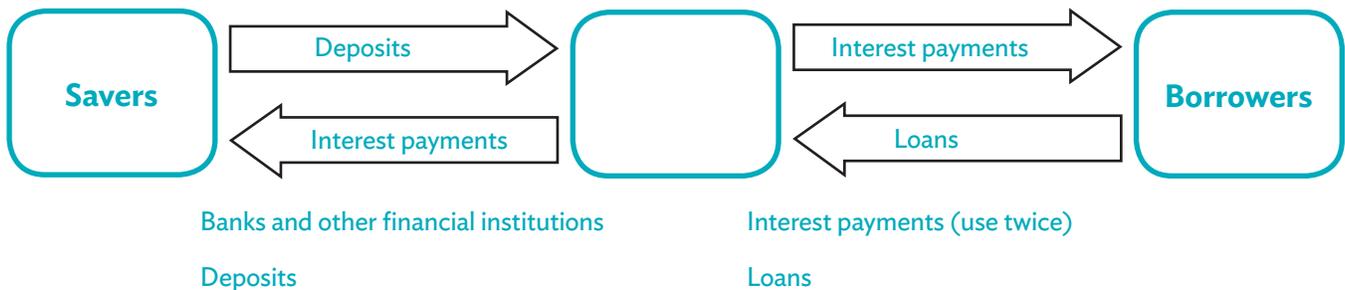
Suggested Answers

Handout 2: **Thinking about Banks**

1. Use information from Handout 1: Banking Basics to complete the table below.

How do banks and other financial institutions serve savers?	How do banks and other financial institutions serve borrowers?
Answers will vary but should include: • Provide safety for deposits • Allow access to funds • Pay interest on deposits	Answers will vary but should include: • Allow borrowers access to loan funds without having to borrow from individuals • Pool savings from many individual savers to allow larger loans

2. Use the terms below to complete this flowchart, labeling all boxes and arrows.

Savers → Deposits → [box] → Interest payments → **Borrowers**

Savers ← Interest payments ← [box] ← Loans ← **Borrowers**

Banks and other financial institutions   Interest payments (use twice)

Deposits   Loans

3. How does the riskiness of a loan affect the interest charges that a borrower must pay? Explain your answer.
As the riskiness of a loan increases, the saver demands a higher rate of return to compensate for the possibility of a loss due to default.

4. What factors should a saver consider when choosing an account at a bank?
Savers should consider the deposit insurance, the interest rate promised and the limitations on withdrawal. Usually, accounts that offer higher interest rates have more restrictions on withdrawals, while accounts that have fewer restrictions on access to the deposits offer a lower rate of return.

Name _____ Date_____

Handout 3: **Interest**

If you save $100 in an account that pays 10% simple interest, how will your original investment grow over 10 years? Round all values to a whole dollar amount.

Year	Beginning Balance	Simple Interest Paid	Year-End Balance
1	$100	$10	$110
2	$110		
3			
4			
5			
6			
7			
8			
9			
10			

If you save $100 in an account that pays 10% interest and is compounded annually, how will your original investment grow over 10 years? Round all values to a whole dollar amount.

Year	Beginning Balance	Simple Interest Paid	Year-End Balance
1	$100	$10	$110
2	$110		
3			
4			
5			
6			
7			
8			
9			
10			

1. Define "interest" in your own words.

2. What is the difference between simple and compound interest?

Use the Rule of 72 to answer the following questions.

3. If you save $500 in an account that pays 3% annual interest, how many years will it take for your savings to double in value?

   _____

4. For your 10th birthday, your aunt gave you $4,000. You decide that you would like to save the money to buy a car when you turn 18, but by then you think you will need $8,000. What interest rate is required to allow you to reach your goal?

   _____

Suggested Answers

Handout 3: **Interest**

If you save $100 in an account that pays 10% simple interest, how will your original investment grow over 10 years? Round all values to a whole dollar amount.

Year	Beginning Balance	Simple Interest Paid	Year-End Balance
1	$100	$10	$110
2	$110	$10	$120
3	$120	$10	$130
4	$130	$10	$140
5	$140	$10	$150
6	$150	$10	$160
7	$160	$10	$170
8	$170	$10	$180
9	$180	$10	$190
10	$190	$10	$200

If you save $100 in an account that pays 10% interest and is compounded annually, how will your original investment grow over 10 years? Round all values to a whole dollar amount.

Year	Beginning Balance	Simple Interest Paid	Year-End Balance
1	$100	$10	$110
2	$110	$11	$121
3	$121	$12	$133
4	$133	$13	$146
5	$146	$15	$161
6	$161	$16	$177
7	$177	$18	$195
8	$195	$19	$214
9	$214	$21	$235
10	$235	$24	$260

Suggested Answers

Handout 3: **Interest**
Page 2

1. Define "interest" in your own words.

   Student answers will vary, but should include some of the following ideas:

   • *Interest is the price paid to use someone else's money.*

   • *Interest is the payment received if someone else uses your money.*

   • *Interest is paid to a saver in return for giving up consumption in the present.*

   • *Interest is paid by a borrower because he or she is consuming before income has been earned.*

2. What is the difference between simple and compound interest?

   Simple interest is paid on the amount of the original investment and does not change over time. Compound interest is paid on the amount of the original investment and all accrued interest.

Use the Rule of 72 to answer the following questions.

3. If you save $500 in an account that pays 3% annual interest, how many years will it take for your savings to double in value?

   It will take 24 years.

4. For your 10th birthday, your aunt gave you $4,000. You decide that you would like to save the money to buy a car when you turn 18, but by then you think you will need $8,000. What interest rate is required to allow you to reach your goal?

   9% annual interest