Lesson 4: Back to School
Part 4: Saving

Lesson Description

In this five-part lesson, students look at the financial lessons that a teen and her family learned while they were displaced from their home and community following Hurricane Katrina. The lesson content examines saving to achieve financial and personal goals.

The PowerPoint-based lesson is designed for personal finance and other related classes.

Time Required

One 55-minute class period for entire lesson.

Concepts

Budget	Money market account
Certificate of deposit	Opportunity cost
Emergency fund	Principal
Interest/Interest rate	Rule of 72
Interest, simple and compound	Saving
Investing	Savings account/Savings bonds
Liquidity	Term

Objectives

The students will be able to:

- Analyze graphs and charts related to saving.
- Articulate reasons and goals for saving.
- Explain and use the vocabulary associated with saving.
- Perform calculations for growth of funds.
- Recognize the need for financial preparedness in the face of a disaster.

Materials

- **Presentation:** *Katrina's Classroom* Lesson 4, Part 4
    - **Infographic:** Why should you save and invest?
      (https://www.frbatlanta.org/education/katrinas-classroom/lesson4/saving-and-investing.aspx)

National Curriculum Standards

COMMON CORE STANDARDS

Grades 6–8 students	Grades 9–10 students	Grades 11–12 students
College and Career Readiness Anchor Standards for Speaking and Listening Presentation of Knowledge and Ideas		
4. Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.		

JUMP$TART NATIONAL PERSONAL FINANCE STANDARDS

8th-Grade Students Additional Expectations	12th-Grade Students Additional Expectations
Saving and Investing	
Standard 1: Discuss how saving contributes to financial well-being.	
▪ Give examples of how saving money can improve financial well-being. ▪ Describe the advantages and disadvantages of saving for short- and medium-term goals. ▪ Explain the value of an emergency fund. ▪ Explain why saving is a prerequisite to investing.	▪ Describe the advantages and disadvantages of saving for short-, medium-, and long-term goals. ▪ Identify and compare saving strategies—including "pay yourself first," payroll deduction, and comparison-shopping to spend less. ▪ Develop a definition of wealth based on personal values, priorities, and goals.

Lesson Procedures

Display the infographic prior to beginning the lesson.

SLIDE 1.   TITLE SLIDE

This lesson will cover information related to saving to achieve personal financial goals and preparing for emergency situations.

SLIDE 2.   LESSON OBJECTIVES

In this lesson, we discuss how saving can help students meet personal financial goals.

SLIDE 3.   SAVING

Tell students they are going to explore the idea of saving to determine what it is and the impact of interest on the growth of their funds.

SLIDE 4.   SAVING VERSUS INVESTING

Although we sometimes use the terms interchangeably, saving and investing are actually two unique concepts. It's important to understand the difference between them and the need for both.

Refer to the "What is the difference?" section of the infographic.

Explain that savings: 1) is the difference between disposable income and consumption; 2) involves the protection and preservation of money from loss; and 3) helps people meet short-term goals and to be prepared for the unexpected.

Tell students the definition of **saving** is to store money safely, such as in a deposit account, for short-term needs such as upcoming expenses or emergencies. Typically, a low, fixed-rate of return is earned in exchange for easy access to and withdrawal of the money, or rather more liquidity.

Remind students that **liquidity** is how easily an asset can be converted into cash, or it is the ready availability of money. The more quickly we can convert an asset to cash, the more liquid it is.

Now explain that **investing**: 1) is making a long-term commitment of money to realize a financial gain; 2) involves taking a risk with money, such as by buying stocks or bonds, in the hopes of realizing higher long-term returns.

SLIDE 5.   REASONS FOR SAVING

Refer to the "What is the difference?" section of the infographic, specifically "Reasons for Saving."

Tell students that people save for their financial security.

It is important to establish positive relationships with financial institutions. People who have bank accounts can create financial stability and plan for emergencies.

Recall that an **emergency fund** is money set aside that is readily accessible to meet unexpected expenses. An emergency fund is vital to cope with emergencies such as natural disasters and unexpected life situations. A general rule of thumb for an emergency fund is to have three to six months' worth of living expenses.

Also, savings can help people meet monthly budget shortfalls.

Savings also helps meet future needs. Say you need a new car at some point in the future. Savings allows you to pay for all or part of the cost of the car.

There is a cost to attaining a postsecondary education and savings can help cover your education expenses.

People often start by saving money to meet various specific personal financial goals as well as to acquire enough money to invest for long-term goals. Although you may not be able to buy stock with just $5, you will have enough money to buy shares of stock if you've been saving $5 per week for the past year.

SLIDE 6.   YOUR GOALS FOR SAVING

Remind the students that since each person has different personal values and financial goals, each should reflect on these values. Tell the students that they will consider what is important to them and what strategies will be necessary to achieve their savings goals.

Have students work individually to develop written responses to the following questions:

- List three things you want that may require you to save money to buy them.

- How much will each item cost?

- How long do you estimate it will take you to save for each item?

- How much per week or per month will you need to save?

- What effect will this have on your budget?

- What might you have to give up to attain these items?

After students complete their individual reflections, debrief as a group.

ASK THE STUDENTS

What sort of things did you identify to save your money for?

Possible responses: iPad, cell phone with data package, gaming system, used car.

Based on the expense, how long will it take you to save enough money to purchase each item?

Possible responses: Several weeks or months; students may indicate a specific time frame.

Will purchasing the item or items affect your budget?

Possible responses: Yes, no.

What strategies do you plan to use to attain the items?

Possible responses: Save; adjust budget; reduce spending.

Remind students that both budgeting and saving can be essential in reaching goals, whether the goal is to get a postsecondary education or to buy an iPad or laptop. Also, explain that budgeting and saving to have the things on the list can help them avoid getting into debt.

SLIDE 7.   TOOLS FOR SAVING

Refer to the "Common saving tools" section of the infographic.

ASK THE STUDENTS

What are some of the characteristics of a savings account?

Possible answers:

- **Designed to help save money.**
- **Often used for emergency fund and other short-term savings goals.**
- **May have minimum balance requirements and withdrawal restrictions.**
- **May have monthly fees.**
- **Earns interest.**
- **FDIC/NCUA-insured.**

What are some of the characteristics of a money market account?

Possible answers (covered in the previous lesson):

- **Offers variable interest rate and has potential of risk of loss.**
- **Usually this offers higher rates of return on deposits.**
- **Minimum balance requirements.**
- **May have monthly fees.**
- **Earns interest.**
- **FDIC/NCUA-insured.**

Note: A money market mutual fund (MMMF) is an investment tool that offers variable interest rates and has the potential risk of loss. Money market mutual funds are not FDIC- or NCUA-insured.

What are some of the characteristics of a certificate of deposit (CD)?

Possible answers (covered in the previous lesson):

- **Deposit locked in for a specific amount of time and interest rate.**
- **Often used for medium-term savings goals.**
- **Minimum opening balance requirements.**
- **Penalties for early withdrawal.**
- **Earns interest.**
- **FDIC/NCUA-insured.**

Tell students that they have not previously covered savings bonds.

Generally, a **savings bond** has the following characteristics:

- Low-risk, liquid savings products.
- Government-issued and government-backed.
- Earns interest.
- Unlike the other savings tools on the list, they are not insured and cannot be purchased at a financial institution.
- Can be purchased via TreasuryDirect.gov or, for some savings bonds, with your IRS tax refund.
- In some cases, penalties for early withdrawal.
- There are different types of savings bonds, each with slightly different features and advantages.

ASK THE STUDENTS

Which tool is the best choice?

Possible responses: It depends on your savings goals.

Remind students that their answers will depend on their specific financial goals, how much interest they want to earn, how they plan to use the money, and the amount of their original deposit. Additionally, emphasize that in most cases, the greater the liquidity, the less interest they will earn, and that the higher the risk, the higher the potential return. It is essential to evaluate the institution and tools available to ensure alignment with their needs and goals.

SLIDE 8. COMPOUND INTEREST: DAILY VERSUS MONTHLY VERSUS YEARLY

Tell students they are going to review common savings-related terminology.

ASK THE STUDENTS

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In finance, what does principal mean?

Answer: Principal is the original amount of money deposited.

In this example, what is the principal amount?

Answer: $1,000

Explain to students that the $1,000 deposit is being made only in the first year. However, if they made deposits in future years, those deposits would also be part of the principal.

What does interest rate mean?

Answer: Interest rate is expressed as a percentage. It is what an account earns if funds are kept on deposit for an agreed-on term.

In this example, what is the interest rate?

Answer: 5%

What does interest mean?

Answer: Interest is money an institution pays you for the use of your funds. One of the factors in determining the amount of interest you receive is the interest rate.

What is the definition of compound interest?

Answer: Compound interest is the method of computing interest whereby the interest rate is applied to the principal and any earned interest. It is often referred to as "interest on interest."

What is the definition of simple interest?

Answer: Simple interest is interest paid only on the principal amount deposited into the account.

What does term mean?

Answer: It is the length of time money is left on deposit in an account.

In this example, what is the term?

Answer: Five years.

Tell students that the graph shows the impact of compounding interest. Explain that if all other factors are held equal (such as the principal amount, or term), the more frequent the compounding and the better the return on savings. Explain that compound interest earns interest on interest. In other words, the money that is being earned in interest gets added to the principal and is used to calculate the interest being paid.

Point out to the students that the green bars represent when funds are compounded daily; the red bars, when compounded monthly; the blue bars, when compounded yearly. Next to each bar is the year-end total. The vertical axis represents the value of the funds for each of the years 1 to 5. The horizontal axis represents the dollar amounts, in $50 increments, with the far left amount being $1,000, the amount of the original deposit.

ASK THE STUDENTS

How would you interpret the information in the graph?

Possible responses: The more frequent the compounding, the more money earned; compound interest helps your money grow.

What is the benefit of compound interest and having your money in one of the savings tools?

Possible responses: Interest is calculated on both the principal and the interest; funds grow more quickly; security of the funds.

OPTIONAL ACTIVITY

Have students visit an online compound savings calculator and use their own scenarios to explore the power of compound interest. Alternatively, click the picture to access an online compound savings calculator at Bankrate.com (www.bankrate.com/calculators/savings/compound-savings-calculator-tool.aspx).

SLIDE 9.   WATCH IT GROW: RULE OF 72

Refer to the "Watch it grow" section of the infographic.

The **Rule of 72** is a mathematical equation that estimates the growth of funds over time with compound interest, specifically the length of time in years for the principal deposit to double. This is calculated by dividing 72 by rate of return. (Some textbooks teach the Rule of 70.)

Explain to students that in the example, $5,000 is deposited at an 8% interest rate. To calculate the number of years it would take the funds to double, divide 72 by 8, and you find that the principal will double every nine years.

In addition to the PowerPoint slide, this example can be found at the bottom of the "Watch it grow" section of the infographic. You may also want to refer to the other example on the infographic as well.

> **ASK THE STUDENTS**
>
> **How long will the $5,000 principal take to double if the interest rate were now 9%?**
>
> **Answer: 8 years (72 ÷ 9 = 8)**

Explain to students that you can also use this formula to determine what the interest rate would be if you know the length of time and the principal. The calculation would be similar except now divide 72 by the number of years to find the interest rate needed to double the $5,000 to $10,000.

> **ASK THE STUDENTS**
>
> **In the example on the screen, assuming that you don't know the interest rate, what numbers would you use to determine the interest rate?**
>
> **Answer: Divide 72 by 9 (the number of years), which would result in the interest rate being 8%.**

SLIDE 10. RULE OF 72 CALCULATIONS: PROBLEM #1

Tell students to work with partners to solve the following problems.

> **ASK THE STUDENTS**
>
> **If you deposit $50,000, how many years will it take for it to grow to $100,000?**

Tell the students they should solve for each of the interest rates listed.

After students finish their calculations, go over each of the calculations and answers.

> **ASK THE STUDENTS**
>
> **What formula did you use to calculate the number of years?**

Answer: 72 ÷ interest rate = number of years

PowerPoint instructions

Click the **Enter** key (or the advance button) to reveal the answers.

What was your answer at 4% annual interest?

Answer: 18 years (72 ÷ 4 = 18)

What was your answer at 6% annual interest?

Answer: 12 years (72 ÷ 6 = 12)

What was your answer at 9% annual interest?

Answer: 8 years (72 ÷ 9 = 8)

What was your answer at 12% annual interest?

Answer: 6 years (72 ÷ 12 = 6)

Do interest rates matter? If so, why?

Possible responses: Yes, because higher interest rates lead to higher rates of return; one needs to understand if interest rates are keeping up with the rate of inflation.

SLIDE 11.   RULE OF 72 CALCULATIONS: PROBLEM #2

Tell students they will again work with their partners to solve the following problems.

ASK THE STUDENTS

What interest rate is needed to grow $50,000 to $100,000?

Remind them that this was the alternative calculation discussed on the Rule of 72 slide.

Tell students they should solve for each of the years listed.

After students finish their calculations, go over each of the calculations and answers.

ASK THE STUDENTS

What formula did you use to calculate the interest rate?

Answer: 72 ÷ number of years = interest rate

PowerPoint Instructions

Click the **Enter** key (or the advance button) to reveal the answers.

What was your answer at 2 years?

Answer: 36% interest rate (72 ÷ 2 = 36)

What was your answer at 5 years?

Answer: 14.4% interest rate (72 ÷ 5 = 14.4)

What was your answer at 10 years?

Answer: 7.2% interest rate (72 ÷ 10 = 7.2)

What was your answer at 20 years?

Answer: 3.6% interest rate (72 ÷ 20 = 3.6)

Does the term (number of years) matter? If so, why?

Possible responses: Yes, because shorter terms require higher interest rates in order for the principal to double; one needs to understand how long it will take for the principal to double in value.

Why does the Rule of 72 matter?

Possible responses: The rule of 72 allows individuals to understand how long it will take a deposit to double with compound interest; it is a tool to help people understand whether they are making smart decisions with their funds.

SLIDE 12.   VOCABULARY REVIEW

PowerPoint instructions

In this activity, students select a word from the word bank for each definition. Read the definition and then ask: Which word from the word bank matches definition #1?

Click on the slide to reveal the correct term for definition #1. Repeat the process until you've matched all eight words to the corresponding definitions.

SLIDE 13.   IN SUMMARY

PowerPoint instructions

Click the **Enter** key (or the advance button) to reveal each summary point.

In this lesson, we learned that:

- Saving allows you to meet short-term goals and be prepared for the unexpected.

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