Lesson 9

Save and Invest: Risk and Return

Lesson Description

This lesson begins with a brainstorming session in which students identify the risks involved in playing sports or driving a car. From these responses, the concept of risk is defined as the possibility of a loss or injury. After narrowing the discussion to the concept of financial risk, the possibility of a monetary loss, students explore different traits that impact the amount of risk an investor might be willing to take. Next, students work in groups to analyze case studies to identify the risk factors faced by saver or investor. The lesson concludes with a review of the impact that two wealth-building assets, stocks and bonds, have on an individual's balance sheet.

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

Saving and Investing
Standard 3: Evaluate investment alternatives.

Instructional Objectives

Students will:

- Explain the relationship between risk and reward.
- Describe different types of financial risk.
- Analyze a saving or investing scenario to identify financial risk.
- Evaluate various financial assets to identify potential risks and rewards.

Time Required

One 50-minute class period

Materials Required

SmartBoard
Notebook File
Copy of Activity 1: Risk and Return Case Studies, cut into four sections
Copies of Handout 1: Risk and Return of Wealth-Creating Assets

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 that the topic of the lesson is Risk and Return.

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

3. Display Slide 3. Use the graphic on the slide and the questions below to introduce the concept of risk. Record student answers in the space provided.

   How would you describe the risks of playing sports?
   - Student answers will vary but might include injury, death and defeat.

   How would you describe the risks of driving?
   - Student answers will vary but might include wrecks, repairs, tickets and higher gas prices.

   Does the person playing sports or driving the car know that these outcomes are possible? Does the person know that they will happen?
   - While they know that negative outcomes are possible, most people think that it will not happen to them.

   Tell students that risk is the possibility of loss or injury.

4. Display Slide 4. Use the interactive on the slide and information below to review the difference between wealth-creating assets and depreciating assets.
   - Touch the car graphic to display information about and examples of depreciating assets.
     - Depreciating assets are assets that decrease in value over time.
   - Touch the bond and stock graphics to display information about and examples of wealth-creating assets.
     - Wealth-creating assets, also called appreciating assets, generally increase in value over time or provide a rate of return.
   - Ask students what are some wealth-creating assets?
     - Student answers will vary but might include stocks, bonds, art or collectibles and real estate.
   - Ask students what are some ways that wealth-creating assets can build wealth?
     - Many assets have the possibility of increasing in value from their purchase price, called capital appreciation.
     - Some assets provide a regular rate of return through an interest payment, like bonds, savings accounts, certificates of deposit and some stocks.

5. Display Slide 5. Use the graphic and definition on the screen to remind students that, while people invest in the hopes of making money, there is financial risk in many investments.
   - Formalize the definition of financial risk as the possibility that an asset will fail to produce a return or will lose value over time.
   - Ask students what are some events or conditions that can cause wealth-creating assets to fail to produce a return or lose value?
     - Student answers will vary but could include a recession, a company going out of business or the real estate market falling.

6. Display Slide 6. Use the information on the slide to explain financial risks faced by investors.

- Pull the tab on the left side of the screen to display information about the risk of capital loss.
  - Use the definition in the pull tab to explain that when the value of an asset falls below the purchase price, an investor faces a capital loss.
- Pull the tab on the right side of the screen to display information about the risk of default.
  - Use the definition in the pull tab to explain that when an interest-bearing investment fails to pay the promised interest or return the original investment, it has defaulted.
  - This occurs because the borrower is failing to make payments as promised.

7. Display Slide 7. Use the graphics on the screen and the information contained in the pull tabs to explain other investment risks.
   - Pull the tab on the left to display information about the risk of inflation.
     - Remind students that inflation is when prices of all goods and services provided in the market are increasing.
     - Explain to students that whenever an investor earns a rate of return less than the rate of inflation, the investor experiences a decrease in purchasing power.
   - Pull the tab on the right to display information about the risk of liquidity.
     - Tell students not all investments can be sold easily. When an investment cannot be sold, an investor cannot realize a capital gain.
     - This risk of liquidity is often associated with art, collectibles and sometimes real estate.

   Ask students why, in light of all the risk, people are willing to invest in anything at all?
   - Student answers will vary but may include a notion that with greater risk comes greater reward.

8. Display Slide 8. Use the graphic on the slide to discuss the risk/return relationship with students.
   - Tell students that with greater risk, often there is greater reward, or a larger financial gain.
   - With less risk, there is often less potential for large financial gains.
   - Note: If your students have been through Lesson 8: Investing for a Lifetime, remind them that over time, greater risk often yields greater return, but over short periods of time, an investor may experience losses, just as was seen in the investing for a lifetime simulation.

9. Display Slide 9. Use the Flash application to discuss with students how investors determine how much risk they can afford to take.
   - Ask students why—if, in general, greater risk yields greater reward—all investors don't purchase very high risk investments?
     - Student answers will vary but might include fear of loss, investors are older or younger and have different amounts of time until they anticipate using their money, different financial goals and different needs for high returns.
   - Touch the graphic of the car, keys, palm trees and plane tickets.
     - Use the information in the fly-out box to explain that when people develop financial goals, they require certain rates of return. When people are selecting investments, they should consider the return necessary to meet their goals and try to minimize their financial risk.
   - Touch the group of people in the middle.
     - Use the information in the fly-out box to explain that different people have different tolerance for financial risk.
     - Even when investments perform as expected over long periods, there may be times when investments lose

value or fail to perform. When this happens, an investor's risk tolerance will often dictate their response to these losses or failure of performance.
  - It is important, when considering an investment, to explore the possibilities of loss and how it will impact you.
- Touch the clock on the right.
  - Use the information in the fly-out box to explain how an investor's time horizon can affect their willingness and ability to take financial risks.
  - The amount of time you have until you plan to use the money invested will have an impact on how much risk you can take with the investment.
  - If the money is for a vacation next summer, you will not have the luxury of time to recover from a year of underperformance.
  - If the money is for retirement in 30–40 years, you may be able to take more risks in anticipation of higher long-term returns.

10. Divide students into four groups. Distribute one section from Activity 1: Risk and Return Case Studies to each group. Have each group work together to identify the specific type of financial risk that is faced by the saver in their case study.

11. Display Slides 10–13. Have a spokesperson from each group read the case study out loud and explain the type of financial risk that is demonstrated. Use information on the visual and the suggested answers to guide the discussion. After the presentation, pull the numbered tab from the right side to display the suggested answer.

12. Display Slide 14. Use the Flash application on the slide to review the potential returns from an investment in stocks.

    Use the arrows on the right to raise and lower the stock price.
    - As the stock price increases, the value of the stock increases. Therefore, net worth rises.
    - As the stock price decreases, the value of the stock decreases. Therefore, net worth falls.

    Raise the stock price to an amount over $50. Use the "Sell Stock" button to sell the stock and realize a capital gain.
    - Point out the changes on the balance sheet.
    - Shares owned are reduced to zero, and the value of the stock at the time of sale is credited to the savings account.
    - Point out that the increase in net worth occurred when the stock appreciated in value. The sale transferred assets from the stock entry on the balance sheet to the savings account.
    - Now, change the stock price and point out that after the stock is sold, the changing price no longer affects net worth.

    Use the "Reset" button to return the balance sheet to the original values. Reduce the stock price to less than $50 and use the "Sell Stock" button to sell the stock and realize a capital loss.
    - Point out the changes to the assets on the balance sheet.
    - The decrease in net worth occurred when the stock depreciated in value. The sale transferred assets from the stock entry on the balance sheet to the savings account.

Use the "Reset" button to return the balance sheet to the original values. Discuss dividends using the information below.

- Dividends are a portion of a company's profit paid to stock owners. Dividends are usually paid quarterly and are stated as a dollar amount per share.
- Press the "Receive Dividend" button to credit the quarterly payment to the savings account.
- Change the stock price. Press the "Receive Dividend" button again. Point out that changes in the stock price do not affect the dividend payment.
- Press the "Receive Dividend" button two more times to receive the final two quarterly dividend payments for the year. Note that the "Receive Dividend" button will disappear.

13. Display Slide 15. Use the Flash application on the slide to review how bonds help investors build wealth.

- Choose an interest (coupon) rate using the up and down arrows. The default interest rate is 5%. Once you have chosen the interest rate, touch OK.
- Review the components of the balance sheet.
  - Identify the assets and liabilities listed on the balance sheet.
  - Identify net worth on the balance sheet. Remind students that Net Worth = Assets – Liabilities. (See BW Lesson 1.)
  - Point out the coupon rate and amount of the annual coupon payment. Remind students that Coupon Payment = Coupon Rate * Face Value of the Bond.
- Touch the "Receive Interest" button.
  - Ask students to identify which entries on the balance sheet changed.
    Savings and Net Worth increased $50 (the amount of the coupon payment with 5% coupon rate; will vary when a different interest rate is selected)
  - Note: The year will advance from 1 to 2.
- Continue to click the "Receive Interest" button to show the coupon payment in Years 2–9.
  - Ask students to identify which entries on the balance sheet changed in each year.
    Savings and Net Worth increase $50 in each year.
  - Ask students why the coupon payment is the same every year.
    It is based on the coupon rate and the face value of the bond.
  - When the year counter displays year 10, tell students that the 10-year bond is about to mature. Ask them what this would mean to the investor.
    When a bond matures, the principal is returned and interest payments stop.
- Touch the "Receive Interest" button one final time to advance to bond maturity.
  - Ask students to identify the changes to the balance sheet.
    The savings account will increase by $1,050 and the bond entry will go to zero. Net worth increased by $50.
  - Ask students to explain why these changes took place.
    The bond matured and the investor received the face value and final interest payment, but no longer holds the bond.
  - Ask students to identify how much interest the investor received over the life of the bond.
    The investor received 10 payments of $50 for a total of $500. This is the amount of wealth or increased net worth created by owning the bond.

Closure

Review the major concepts of the lesson using the following questions:

1. What outcomes does a saver or investor want?
   Growth in value and/or a return

2. What are the four types of risk that a saver might face?
   Default, capital loss, inflation and liquidity

3. What is the relationship between risk and reward?
   It is positive—the greater the risk, the greater the potential reward.
   The lower the risk, the lower the potential reward.

4. What three things might you want to consider when deciding the amount of risk you want to take on an investment?
   Financial goals, time horizon and financial risk tolerance.

Assessment

Distribute Handout 1: Risk and Return of Wealth-Creating Assets. Allow students to complete the chart independently.

Activity 1: Risk and Return Case Studies

Case 1

Several years ago, Chelsea was given a painting by a famous artist. She planned to keep it as an investment, hoping its value would increase so that she could sell it and make a profit. Several years later, Chelsea had costly emergency surgery, and she did not have enough money in her savings to pay for the procedure. Fortunately, the painting had substantially increased in value, and she decided to sell it. She found a reputable art dealer who told her that market conditions would make it difficult to sell the painting for its full value in the next six months. Chelsea needed the money immediately, so the art dealer offered to buy the painting at a deep discount.

How would you describe the financial risk that Chelsea faces?

Case 2

Paul's friend Gabby had an idea of creating a photography service that went to school functions, such as football games, pep rallies and dances, to take candid pictures. The pictures would be available to purchase the following week. She needed $300 to buy additional equipment and start an advertising campaign, so she asked Paul for a loan. She promised to pay him back the $300 and give him 25 percent of her profits from the first semester. Gabby sold a few pictures the first week of school but quit going to events to take pictures. She can't repay the loan, and there are no profits. Paul lost $300.

How would you describe the financial risk Paul faces?

Case 3

Mike spent every summer during high school mowing yards. He saved the money to pay for his living expenses during college. He decided to keep his money in certificates of deposit at his bank. The deposits earned 3 percent interest. He anticipated that he would have enough money for two years of living expenses. When he got to his college town, he realized that food and rent, along with many other prices, were much higher than he had originally estimated. Prices rose faster than the value of his savings.

How would you describe the financial risk Mike faces?

Case 4

Jennifer decided to buy $1,000 worth of stock in a company that makes very popular products. She believed that the company would grow and be profitable for the next several years. Several months later, she found out that the company lost a major case in court and will no longer be able to sell its most popular product. Jennifer decided to sell all her stock. When she called her stockbroker, she found out that her shares were worth $400.

How would you describe the financial risk that Jennifer faces?

Activity 1: Risk and Return – Suggested Answers

Case 1

Several years ago, Chelsea was given a painting by a famous artist. She planned to keep it as an investment, hoping its value would increase so that she could sell it and make a profit. Several years later, Chelsea had costly emergency surgery, and she did not have enough money in her savings to pay for the procedure. Fortunately, the painting had substantially increased in value, and she decided to sell it. She found a reputable art dealer who told her that market conditions would make it difficult to sell the painting for its full value in the next six months. Chelsea needed the money immediately, so the art dealer offered to buy the painting at a deep discount.

How would you describe the financial risk that Chelsea faces? ***She cannot sell the painting for its full value as quickly as she needs to do so. Therefore, she faces a liquidity risk.***

Case 2

Paul's friend Gabby had an idea of creating a photography service that went to school functions, such as football games, pep rallies and dances, to take candid pictures. The pictures would be available to purchase the following week. She needed $300 to buy additional equipment and start an advertising campaign, so she asked Paul for a loan. She promised to pay him back the $300 and give him 25 percent of her profits from the first semester. Gabby sold a few pictures the first week of school but quit going to events to take pictures. She can't repay the loan, and there are no profits. Paul lost $300.

How would you describe the financial risk Paul faces? ***Paul has lost the money because Gabby cannot repay him, so he faces the risk of default.***

Case 3

Mike spent every summer during high school mowing yards. He saved the money to pay for his living expenses during college. He decided to keep his money in certificates of deposit at his bank. The deposits earned 3 percent interest. He anticipated that he would have enough money for two years of living expenses. When he got to his college town, he realized that food and rent, along with many other prices, were much higher than he had originally estimated. Prices rose faster than the value of his savings.

How would you describe the financial risk Mike faces? ***Since prices have risen and Mike has lost purchasing power, he faces the risk of inflation.***

Case 4

Jennifer decided to buy $1,000 worth of stock in a company that makes very popular products. She believed that the company would grow and be profitable for the next several years. Several months later, she found out that the company lost a major case in court and will no longer be able to sell its most popular product. Jennifer decided to sell all her stock. When she called her stockbroker, she found out that her shares were worth $400.

How would you describe the financial risk that Jennifer faces? ***The stock has declined in value, so if Jennifer sells the shares today, she will face the risk of a capital loss.***

Name:____ Date:____________

Lesson 9 – Save and Invest: Risk and Return

Handout 1: Risk and Return of Wealth-Creating Assets

Identify potential rewards and risks associated with each financial asset and list them in the appropriate column.

Reward Interest, Dividend, Capital Gain	**Financial Assets**	**Risk** Default, Capital Loss (falling market price), Inflation (lost purchasing power), Liquidity
	Savings account	
	Money market accounts	
	Certificates of deposit (CDs)	
	Corporate bonds	
	Municipal bonds	
	Savings bonds	
	Treasury bonds, bills and notes	
	Stocks	
	Mutual funds	
	House and/or real estate	
	Your own business	
	Collectibles such as rare coins, antiques or art	

Handout 1: Risk and Return of Wealth-Creating Assets

Suggested Answers

Reward Interest, Dividend, Capital Gain	**Financial Assets**	**Risk** Default, Capital Loss (falling market price), Inflation (lost purchasing power), Liquidity
Interest	**Savings account**	Inflation
Interest	**Money market accounts**	Inflation
Interest	**Certificates of deposit (CDs)**	Inflation and liquidity
Interest Capital gains	**Corporate bonds**	Inflation, liquidity and default
Interest Capital gains	**Municipal bonds**	Inflation, liquidity and default
Interest	**Savings bonds**	Inflation and liquidity
Interest	**Treasury bonds, bills and notes**	Inflation (if interest not indexed to inflation) and liquidity
Capital gains Dividend income	**Stocks**	Liquidity, default, inflation and capital loss
Capital gains Dividend income	**Mutual funds**	Liquidity and capital loss
Capital gains	**House and/or real estate**	Liquidity and capital loss
Capital gains Dividends	**Your own business**	Liquidity, default (if company goes bankrupt) and capital loss
Capital gains	**Collectibles such as rare coins, antiques or art**	Liquidity and capital loss