Investment Performance: Short-Term and Long-Term Returns

LESSON DESCRIPTION (Background for the Instructor)

In this lesson, students will learn about the risks and rewards associated with various types of investments (e.g., stocks, bonds, mutual funds) and their short-term and long-term returns. They will also learn key investing concepts including compound interest, investment risk tolerance, and time diversification. Students will also complete activities that allow them to apply this knowledge to real life situations.

The lesson includes five activities that instructors can select from. In these activities, students will:

- Conduct a *Web Quest* to learn about short-term and long-term returns on investments
- Use a financial calculator to answer questions about investment returns over different time periods
- Review graphics and answer questions about historical investment performance
- Analyze case study questions about a fictional family's investment decisions
- Summarize an article or blog post about a topic related to investment returns

The lesson also contains 10 assessment questions (5 multiple choice and 5 True-False), learning extensions (i.e., suggested learning activities beyond the scope of the lesson plan), and references and resources.

INTRODUCTION (Background for the Instructor)

Investments grow through compound interest, which is the earning of interest on interest, as well as the amount that was initially invested (principal). The longer that money is invested, and the higher the average returns that are earned, the more wealth investors will accumulate. Even small differences in investment returns (e.g., 7% vs. 6%) will make a big difference when compounded over many decades of investing. A young adult age 22 has 45 years to invest before collecting full Social Security at age 67.

A typical economic cycle lasts about five years. The economy expands, reaches a peak (high point), contracts, reaches a trough (low point), and expands again. For this reason, it is generally not wise to invest money in stocks and stock mutual funds unless a financial goal is five or more years in the future. Otherwise, an investor runs the risk of having to withdraw funds at a loss during a market downturn. Investors need written goals so they can match the time frame for their goal with suitable investments.

Investors can be owners or loaners. With *ownership* investments (e.g., stock, real estate, and collectibles), they own something. For example, investors might have an ownership interest in a company by virtue of being a shareholder, or own piece of property, or a valuable antique. With *loanership* investments, investors lend money to a government entity (e.g., Treasury and municipal bonds), a corporation (e.g., corporate bonds), or a financial institution (e.g., certificates of deposit).

The Rule of 72 can be used to estimate either the interest rate or the time period that will be required for a sum of money (any amount) to double. Simply divide one of these two variables (i.e., interest rate or time period) into 72 to solve for the unknown variable. The number used for the interest rate variable may be known (e.g., rate on a certificate of deposit) or assumed (e.g., use of average annual stock returns). The time frame can match the target set for a specific financial goal.

As an example of the Rule of 72, if you earn a 6% average annual return, your money will double in a *time period* of 12 years (72 divided by 6). If you want to double your money in 10 years, you will need to earn an *interest rate* of 7.2% (72 divided by 10).

A frequently cited guideline is "110 – your age" as the percentage of a portfolio to hold in stocks. For example, 110 – 30 (age) = an 80% stock allocation. At age 40, the stock allocation would be 70% (110-40). This guideline corresponds with recommendations to gradually decrease the percentage of stocks in a portfolio as investors get older. Of course, individual risk tolerance also needs to be considered.

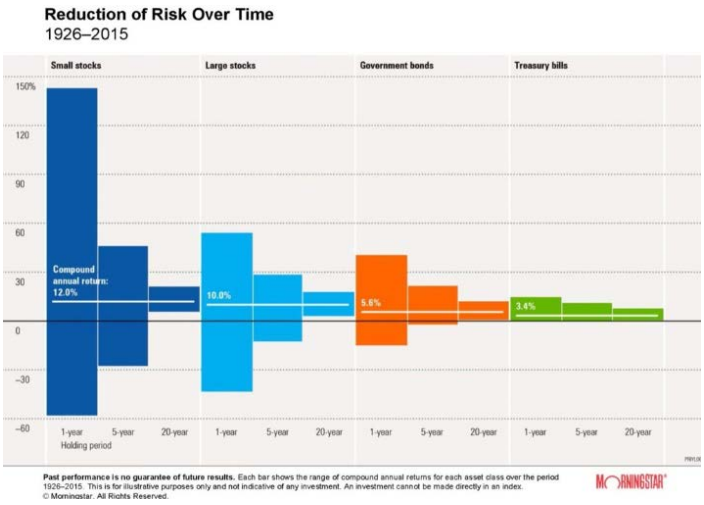
Investment asset allocation is very much like a teacher's grade book where various exams and assignments are worth a certain percentage of a student's grade and are all averaged together based on their percentage weight in a student's total grade. The weighted average of an investment portfolio reflects both the rate of return earned on individual investments and their proportionate weight in the total portfolio.

Investors must have an "investor's mindset." This means that they should expect that they could lose money (i.e., their principal). Their investments could have a negative return, resulting in a loss of principal. Investors cannot assume a guaranteed rate of return or even that their money will grow like they can with cash equivalent assets (e.g., money market funds and certificates of deposit).

There are a number of reasons why investments can fluctuate in value including changes in the economy, stock market volatility, political uncertainty, business failures, interest rate changes, fluctuations in currency values, and company earnings. Two key strategies to mitigate investment risks are *diversification* (i.e., investing in different types of assets) and *dollar-cost averaging* (i.e., investing regular dollar amounts at regular time intervals such as $50 every month or 6% of your gross income every payday).

Long-term investors may also benefit from *time diversification*. What this means is that, as an investment's holding period increases (e.g., 20 years vs. 5 years), investment risk due to market volatility (i.e. ups and downs of prices) may lessen. The benefits, if any, of time diversification are debated among investment professionals and researchers. An investment portfolio should also be rebalanced periodically to maintain its original asset weightings (e.g., 50% stocks, 40% bonds, 10% cash assets). Otherwise, it will become more heavily weighted toward one asset class (e.g., stock) over time, which increases investment risk.

The decreasing volatility of investments over time is illustrated in the figure below from Morningstar. Note that the spread between the highest and lowest values of all four asset types (small and large company stocks, government bonds, and Treasury bills) decreases from 1-year to 5-year and then to 20-year time periods. Small company stocks have the most volatility and Treasury bills have the least. Investors who hold stocks for the long term can mitigate their risk of loss based on trends shown in this historical data.



Source: Morningstar

Three “evergreen” wealth accumulation tips are: 1. Start investing today, 2. Invest as much as you can, and 3. Keep adding to your investments consistently over a long period of time. Most people don’t become wealthy on their wages alone. They do so with a combination of steady investing, a long time frame, and compound interest.

The following quote by industrialist John D. Rockefeller says it all: “If you want to become really wealthy, you must have your money work for you. The amount that you get paid for your personal effort is relatively small compared with the amount you can earn by having your money make money.”

Historically, common stocks have outperformed all other investments. According to Morningstar Inc.'s Ibbotson Stocks, Bonds, Bills, and Inflation (SSBI) data, which is updated annually, the average annual return on U.S. large company stocks from **1926 to through 2017** was **10.2%** versus **12.1%** for small company stocks, **5.5%** for long-term government bonds, and **3.4%** for U.S. Treasury bills. The inflation rate during this period was **2.9%**.

[**Note:** These rates of return on investments since 1926 can be updated annually by searching online for “Ibbotson SSBI 1926- (the date of the previous year)”].

History tells us that investing, especially over long time frames in a diversified portfolio that includes equities such as stocks and growth mutual funds, is a proven way to accumulate wealth. It is important to plan for the effects of taxes and inflation and earn enough on investments to offset them.

Note: Related information about investing and compound interest can be found in the New Jersey Department of Education Standard 9.1.12.D3 lesson plan *Investing For Your Future* and the Standard 9.1.12.B2 lesson plan *Saving and Investing Strategies and Influences* and the Standard 9.1.12.B8 lesson plan *Compound Interest: Your Best Friend or Worst Enemy*.

OBJECTIVES

Students will be able to:

- Describe historical short-term and long-term returns for various investments.
- List investments that are appropriate for different investment time frames.
- Distinguish between the characteristics and returns of ownership and loanership investments.
- Apply the Rule of 72 to estimate how long it will take to double a sum of money.
- Define the term “time diversification” and how it benefits investors.

NEW JERSEY PERSONAL FINANCIAL LITERACY STANDARD

- Standard 9.1.12.D.1: Calculate short- and long-term returns on various investments (e.g., stocks, bonds, mutual funds, IRAs, deferred pension plans, and so on).
  See http://www.state.nj.us/education/aps/cccs/career/FLFAQ.htm#gradcredit and http://www.state.nj.us/education/cccs/2014/career/91.pdf for information about Standard 9.1

TIME REQUIRED

45 to 180 minutes (depending upon student progress and content depth and number of activities used)

MATERIALS

- *Web Quest: Short-Term and Long-Term Investment Returns* activity handout
- *Compound Interest Calculator Scenarios* activity handout and Investment Returns calculator (Dinkytown): https://www.dinkytown.net/java/InvestmentReturn.html
- *The Historical Return on Investments Data Crunch* activity handout and Ibbotson® SBBI® handout: http://www.nylinvestments.com/polos/MSTT02j-031874128.pdf
- *Case Study: Help the Robinsons Make Investment Decisions* activity handout
- *Investments in the News* activity handout
- *Investment Performance Quiz* (ASSESSMENT)

Teachers are encouraged to use as many of the student learning activities as time permits to provide a fuller understanding of investment returns. The activities can also be used for extra credit assignments, homework, or after-school activities.

PROCEDURE

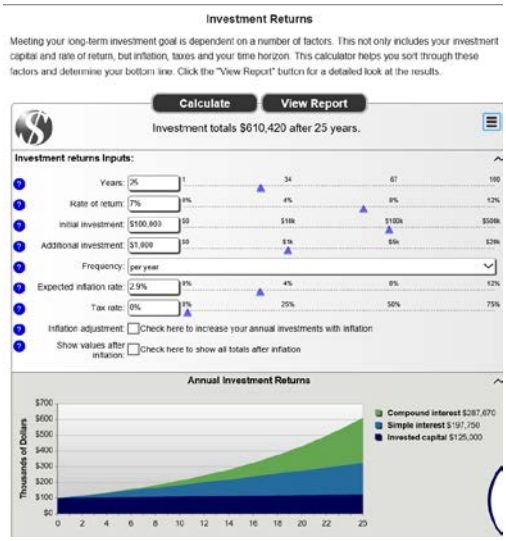
1. Ask students to explain why some investments have higher returns than other investments.

   Answers will vary. Students are likely to mention the amount of risk (of loss of principal) involved with different types of investment products and the length of time that someone is an investor. They might also mention the profitability (or not) of companies that issue stock, market performance, and whether investments have a fixed rate of return (e.g., bonds and other loanership assets) or are subject to market volatility and have a potential to greatly increase in value (e.g., stocks and ownership assets).

2. **Activity 1:** Distribute the *Web Quest: Short-Term and Long-Term Investment Returns* activity handout. Ask students to use an online search engine (e.g., Google, Bing, etc.) and search for the words "investment returns," "short-term investment returns," and "long-term investment returns." Have students find three articles and list key take-aways from the articles on the handout.

   Answers will vary but students are likely to report the following key pieces of information:
   - *A realistic return for investments is 2% to 4% after inflation for bonds and about 7% after inflation for stocks. Cash assets can lose purchasing power when their return is below the inflation rate.*
   - *A 15% to 20% return on investments such as stocks is not a reasonable expectation.*
   - *There is no such thing as a "perfect" investment (i.e., risk-free and tax-free with a high return).*
   - *Investments with higher returns usually come with more risk of loss of principal.*
   - *Stocks have the potential for long-term gains but their prices are volatile and they periodically have short-term downturns in value. For example, between 2008 and 2009, stock prices dropped 57%.*
   - *Average investors have worse returns than the market because they panic during downturns.*
   - *Short-term investments include certificates of deposit and interest-bearing savings accounts. They have a low risk of loss of principal, a low return, and are useful for short-term savings goals.*
   - *Long-term investments include stocks, stock funds, and exchange-traded funds (ETFs). They have a high risk of loss of principal, a high potential return, and are useful to build wealth over time.*
   - *With the exception of fixed rate investments such as bonds, investment returns cannot be predicted in advance. Past investment returns are not guaranteed in the future.*

3. **Activity 2:** Distribute the *Compound Interest Calculator Scenarios* activity handout. Direct students to the Dinkytown *Investment Returns* calculator shown below.



Ask students to read the investment returns definitions under the calculator and then complete the following questions on the handout using the sliders on the online calculator to input data.

Daryl Sweet has a 45-year time horizon from his current age (22) to full retirement age for Social Security (67). He wants to have at least $1 million saved at that time. Daryl has made no initial investment and expects to invest $300 monthly. He feels comfortable assuming a 7% average rate of return, a 3% inflation rate, a 20% tax rate and no inflation adjustments. How much would he accumulate with a 3% rate of return, a 5% rate of return, a 7% rate of return, and a 9% return?

The answers to the questions are shown in the table below:

Rate of Return	Amount of Accumulated Savings	Invested Capital Amount	Simple Interest Amount	Compound Interest Amount
3%	$289,806	$162,000	$87,632	$40,173
5%	$445,076	$162,000	$146,044	$137,032
7%	$702,625	$162,000	$204,447	$336,178
9%	$1,134,216	$162,000	$262,843	$709,374

What types of investments are most likely to provide Daryl with the return needed to reach his goal?

Daryl should select ownership assets such as stocks, stock mutual funds, and, possibly, real estate (depending on the location) that have a potential for long-term growth of principal over extended time periods. He has a 45-year time horizon to reach his goal. According to 1926-2017 *Stocks, Bonds, Bills, Inflation* (SBBI) investment performance data from Morningstar, the returns on small company and large company stocks, respectively, were 12.1% and 10.2% so 9% is not an unreasonable assumption if Daryl has a moderate to high investment risk tolerance level and can withstand periodic market downturns.

Describe the trends in the numbers in the table above.

The first obvious trend is that the amount of accumulated savings increases as the rate of return increases. For example, with the same $162,000 invested capital over 45 years, the difference between the amount accumulated at a 3% return and a 9% return is a staggering $844,410 ($1,134,216 - $289,806). A second key trend is the increase in the amount of compound interest (i.e., interest on interest) as the investment return rises. Compound interest is a key factor in the total amount accumulated. A third key trend is the increasing percentage of compound interest in the amount of accumulated savings as the investment return rises. With a 3% investment return, compound interest is 14% of the accumulated total ($40,173 ÷ $289,806). With a 9% investment return, compound interest is 63% of the accumulated total ($709,374 ÷ $1,134,216). When investments earn a higher return, there is more interest to compound over time.

Do a personal investment calculation with real or hypothetical numbers using the *Investment Returns* calculator and describe the results.

Calculations and answers will vary for each student. Ask for several volunteers to share their results.

What is the take-away message from this activity?

One key take-away is to invest early in life and include some stock in your investment portfolio for the potential to earn a higher return (e.g., 9% versus 3%) to grow money to a higher sum through the awesome power of compound interest. Another take-away is that more conservative investors with less stock in their portfolio and lower investment returns will need to extend their investment time frame and/or increase their monthly savings deposit amount to reach the $1 million savings goal that Daryl wants to achieve. Money will not grow as fast at a 3% return vs. 9% because smaller investment returns will be compounding.

4. **Activity 3:** Distribute the *Historical Return on Investments Data Crunch* activity handout and Ibbotson® SBBI® handout by Morningstar which shows the compound annual return on four different types of investments and the rate of inflation since 1926. Ask students to form small groups and work together to answer the following questions.

Which type of investment had the highest compound annual return since 1926?

Small company (a.k.a., small cap) stocks (i.e., stocks with a market capitalization [share price x number of outstanding shares] of $300 million to about $2 billion). This compares to a capitalization of more than $10 billion for large company (a.k.a., large cap) stocks and between $2 billion to $10 billion for mid-cap [short for capitalization] stocks. The 1926-2018 compound annual return for small company stocks was 12.1%.

The stock returns in the SBBI® figure are representative of specific stock market indexes that are described in the notes below the figure. Investors cannot directly invest into an index but can select index funds that track various benchmark indexes.

Which type of investment had the lowest compound annual return since 1926?

Treasury bills, which are short-term debt securities of the U.S. government. According to the notes on page 2 of the SBBI® figure, this return is derived from 30-day U.S. Treasury bill performance. As shown in the figure, the return on Treasury bills is barely above the inflation rate measured by the Consumer Price Index.

Why is there a large difference between the highest and lowest returns shown in the SBBI® figure?

When investors buy a share of stock, they purchase a share of ownership in a company. There is risk (of loss of principal) involved, especially with small companies that lack a proven track record. Some small companies fail and go bankrupt. However, when a small company succeeds, makes a profit, and goes on to become a large company, investors are rewarded as their shares increase in value. These shares can be sold at a profit, resulting in a capital gain when investors "buy low and sell high." When investors buy a Treasury bill, they are simply making a loan to the U.S. government and they receive a fixed return.

What is the take-away message from the SBBI® figure?

The SBBI® figure shows that the compound annual return on small company and large company stocks has been much higher than that of government bonds and Treasury bills since 1926. For example, the return on large company stocks is three times that of Treasury bills. This speaks to the need to hold some stocks (or stock mutual funds) to build wealth over time and to avoid losing purchasing power due to inflation. Another key take-away is that returns on stocks are much more volatile than those for Treasury securities as indicated by the more jagged lines indicating "peaks and valleys" in investment value. The line for Treasury bills has no downturns but is barely above the line for inflation, resulting in little or no growth, especially after factoring in taxes. Stock investors need to be comfortable with uncertainty about the future value of their investment deposits and the possibility of losing money, especially during short time frames.

5. **Activity 4:** Distribute the *Case Study: Help the Robinsons Make Investment Decisions* handout and ask students to work together in small groups to answer the questions about the case shown below. Debrief students' answers with the entire class by asking them to explain the rationale behind their responses.

Jennifer and Dave Robinson, 32 and 31, have two children, age 7 and 5. Sue is a hairdresser and Jim is self-employed. Together they earn $60,000 a year. They have $1,500 in savings but do not have an adequate emergency fund. Their monthly expenses total $2,500.

Jennifer and Dave have adequate insurance and recently refinanced their mortgage at a low interest rate. They don't want to pay it off because they believe they can earn a higher return on investments. Jennifer's parents generously set aside enough money for the children's future educational expenses.

The Robinsons recently received a $250,000 inheritance. They want to increase their emergency fund and use the remainder to invest for two goals: a nicer home in three years and retirement in 35 years. An online calculator told them they needed to earn a 7% return to meet their retirement goal.

The Robinsons know they must invest carefully. They also know that they need to buy some stocks to grow their money faster than bonds and cash assets. Because retirement is way down the road, they are willing to assume a moderate amount of risk in exchange for the potential for a high return.

Case Study Questions

How much of the inheritance should the Robinsons put in their emergency fund and where should they put this money?

The standard recommendation for funding an emergency fund is three- to six- months expenses. Since the Robinsons' expenses total $2,500, they should set aside at least $7,500 to $15,000. This money should be put in a liquid account where they can access their money without loss of principal. Examples include a bank savings account, money market account, and short-term bank certificate of deposit (CD).

How much of the inheritance should the Robinsons put toward the new house and where should they put this money?

It depends on what type of house the Robinsons want. Perhaps they will want to buy something a little larger than they had originally planned due to the inheritance and/or move up the time frame for completing this goal. They should shop around now to get an idea of current prices for homes in their area and to estimate what their current home is worth. For example, if they can sell their current home for $150,000 and buy a new one for $250,000, they would need to earmark $100,000 from the inheritance for their housing goal. Since this is a short-term goal like the emergency fund, the money should be put in a liquid account where they can access their money without loss of principal. Examples include a bank savings account, money market account, and short-term bank certificate of deposit (CD).

How much of the inheritance should the Robinsons put toward retirement and where should they put this money?

The Robinsons said that they are willing to assume a moderate amount of investment risk and have decades (35 years to retirement) to recover from market downturns. Therefore, they can assume more risk with the remaining portion of the inheritance. For their retirement goal, investments that match their risk tolerance include stocks (income, blue chip, growth, and value), stock mutual funds, and stock index funds.

How does the time frame for the Robinson's financial goals affect their investment decisions?

Investors' goals and the time frame to achieve them will determine where and how long they keep their money invested. Generally, the closer people are to their investment goals, the less risk they should take with money accumulated to achieve them. The Robinsons should focus on safety and liquidity for their emergency fund and the money being set aside for a nicer house in three years and choose cash equivalent assets such as bank accounts, money market funds, and/or Treasury bills. They don't want to put money for these goals in stocks and have to pull this money out and lose principal during a market downturn.

For retirement and other long-term goals, the Robinsons can afford to take more investment risk. While past performance is no guarantee of future results, historical returns have consistently shown good results for stocks, compared to other investments, over long time frames. With 35 years until their retirement, the Robinsons will be able to ride out market downturns and watch their principal grow over time. The bottom line is, the more time investors have to reach their goal, the more risk they can probably afford to take.

6. **Activity 5:** Distribute the *Investments in the News* activity handout and ask students to use an online search engine (e.g., Google, Bing) to search for words like "stock market data" and "stocks in the news," find an article about investment returns, and list three key take-aways. Debrief with the class.

While responses will vary among students, they are likely to mention the recent closing price of a market index (e.g., DJIA), a particular company stock price, or commentary about recent stock market movements.

CLOSURE

Ask students if they have any remaining questions about investment returns. Remind them about the principle of time diversification (i.e., that investments in stocks may be less risky over long time periods than shorter ones) and that they have four to five decades of investing ahead of them before retirement. The volatility of investments, when plotted on a graph, looks like a roller coaster with sharp "peaks and valleys" in the short term and more of a "rolling hills" appearance over long time frames of 15 to 20 years or longer.

GLOSSARY

Asset Allocation- The placement of a certain amount (percentage) of one's investment capital within different types of asset classes; e.g., 50% stock, 30% bonds, and 20% cash equivalent assets.

Buy and Hold- A strategy of purchasing high quality securities and keeping them for a number of years.

Capital Gain- Profit made when an investor sells an investment for more than the amount paid to buy it.

Compound Interest- Earning interest on previously-earned interest to build wealth over time.

Diversification- The process of reducing investment risk by selecting a variety of investments.

Dollar-Cost Averaging- Investing a set amount at set time intervals; e.g., $50 on the first of every month.

Economic Cycle- The recurring pattern of fluctuation in the economy that includes periods of growth (expansion) up to a peak followed by contraction down to a trough and repeated over and over again.

Investing- Setting aside money to grow your net worth and to achieve long-term financial goals.

Investors Mindset- Being willing to assume the risk of loss of investment principal and not expecting investments to perform like savings products.

Investment- Money that is set aside today with the long-term goal of creating future wealth.

Loanership Investment- Type of investment where investors loan money to a company or government entity and receive income (interest) for a set time (e.g., corporate, U.S. Treasury, and municipal bonds).

Ownership Investment- Type of investment where investors own all or part of something and the asset value fluctuates with market conditions (e.g., common stock, stock mutual funds, and real estate).

Principal- The original amount of money that someone invests (e.g., stocks) or borrows (e.g., a mortgage).

Return- The amount of money made or lost on an investment expressed as a dollar value or a percentage.

Risk- The chance of loss of investment principal; e.g., a high-risk investment has a high chance of loss.

Risk Tolerance- The personal feelings of individuals about how much investment risk they want to take.

Rule of 72- Shortcut formula used to calculate the interest rate or time frame to double a sum of money; divide the known variable (e.g., interest rate) into 72 to calculate the unknown one (e.g., time period)

Stock- Unit of ownership of a corporation represented by shares owned by individual investors.

SSBI (Stocks, Bonds, Bills, Inflation) Yearbook- An annually updated publication about the historical performance of investments that includes the returns on U.S. large company and small company stocks, long-term government bonds, U.S. Treasury bills, and the inflation rate from January 1926 to the present.

Time Diversification- The reduced risk associated with investing in stocks over the long term, versus the short term. The extent of time diversification is subject to debate among investment professionals and academic researchers who disagree about its benefit, if any, to investors. Some argue that, if stock returns are truly random, there is no long-term performance guarantee regardless of an investor's holding period.

LEARNING EXTENSIONS

If time permits, the following activities can be used to extend the depth of this lesson:

- Invited a certified financial planner ® or stock broker as a guest speaker to discuss investment products, risks, and returns and share stories about successful and unsuccessful investors.

- Show one or more of the following videos about investment techniques, risks, and returns:
  - *Investing 101* (Smart Investing Trends) (6:37): https://www.youtube.com/watch?v=l4TzfPfLMB4
  - *Risks Involved With Investing* (Zions TV): https://www.youtube.com/watch?v=ziyJShgA8p8
  - *Investing and Risk* (Fidelity): https://www.youtube.com/watch?v=Y2ZJOuA6nXk
  - *What's Diversification* (Fidelity): https://www.youtube.com/watch?v=LU8tubkz_Fg
  - *Time Value of Money* (Zions TV): https://www.youtube.com/watch?v=0etEItEINZw
  - *How Stock Indexes Work* (Zions TV): https://www.youtube.com/watch?v=gkYD6kyc3QE&t=72s
  - *Introduction to Time Diversification* (The American College of Financial Services): https://www.youtube.com/watch?v=RpAFF0EaMZM

- Have students test out additional investment return calculators:
  - *Investment Return Calculator* (AARP): https://www.aarp.org/money/investing/investment_return_calculator/
  - *Compound Interest Calculator* (U.S. Securities and Exchange Commission): https://www.investor.gov/additional-resources/free-financial-planning-tools/compound-interest-calculator
  - *Finance Calculator* (Calculator.net): http://www.calculator.net/finance-calculator.html
  - *Investment Performance Calculator* (Money Chimp): http://www.moneychimp.com/features/portfolio_performance_calculator.htm
  - *Savings Calculator* (FINRA Investor Education Foundation): https://tools.finra.org/savings_calculator/

- Use lessons, activities, projects, case studies, and other interactive materials on investing developed by Next Gen Personal Finance: https://www.ngpf.org/curriculum/investing/

- Have students write a brief reaction paper on what they learned about investment returns and how they plan to apply this information in their lives.

ASSESSMENT: *Investment Performance Quiz*

Instructors are encouraged to use the questions below for content review or as a pre-and/or post-test to determine gains in student knowledge about investment returns after teaching this lesson.

Correct answers to the multiple choice and True-False questions are shown in boldface type.

Multiple Choice Questions

1. When you diversify investments, this means you are
   a. Moving your money according to the stock market's performance
   b. Investing a set amount in mutual funds every month
   c. Dividing your money among different types of investments
   d. Eliminating investment risk

2. An investment that represents a share of ownership of a company is called a
   a. Bond
   b. Stock
   c. Certificate of deposit
   d. Mutual fund

3. Buying a specific amount of stock shares at regular time intervals is called
   a. Dollar-cost averaging
   b. Market timing
   c. The buy and hold technique
   d. Leverage

4. Which of the following investments has historically earned the highest average annual return?
   a. Small company stocks
   b. Large company stocks
   c. U.S. government bonds
   d. U.S. Treasury bills

5. About how many years will it take for $1,000 to grow to $2,000 with an average annual return of 7.2%?
   a. 8 years
   b. 9 years
   c. 10 years
   d. 12 years

True-False Questions

1. As a guideline for investing, investors should know that the typical economic cycle lasts 7 to 8 years.
   (FALSE: The correct answer is about five years. This is why many investment professionals suggest not investing in stocks (or stock mutual funds) for financial goals that are less than five years away. By following this advice, investors are less likely to be caught in the situation of having to withdraw money from their investment during a market downturn)

2. Investors can make money on a stock if the price rises and they receive dividends **(TRUE: These are the two ways that investors can benefit from stocks: an increase in the price per share and a dividend declared by the company's board of directors)**

3. The sooner people start investing, the more time their money has to grow **(TRUE: Investing early in life, say in one's teens or early 20s, provides additional decades of compound interest and additional time to ride out market volatility. There is a saying in personal finance that "compound interest is not retroactive." In other words, investors cannot earn interest on money that was not previously invested)**

4. Of the four investment categories listed on the Morningstar SBBI (Stocks, Bonds, Bills, Inflation) chart, government bonds have the lowest compound annual return **(FALSE: Treasury bills have the lowest compound annual return. They are a short-term debt instrument of the U.S. government. U.S. Treasury bonds have a much longer time to maturity- 30 years- than U.S. Treasury bills and have had a higher return over time to attract investors to tie up their money for a longer time period)**

5. A frequently cited guideline for the amount of stock in an investor's portfolio is 130 – your age **(False: The most commonly cited guideline for investors with a moderate risk tolerance level is 110- your age. This is just a guideline, however. Individual risk tolerance also needs to be considered)**

REFERENCES AND RESOURCES

Diversifying Your Portfolio (FINRA): http://www.finra.org/investors/diversifying-your-portfolio

Dollar-Cost Averaging (Investopedia): https://www.investopedia.com/terms/d/dollarcostaveraging.asp

Economic Cycle (Investopedia): https://www.investopedia.com/terms/e/economic-cycle.asp

Five Ways to Develop an Investor's Mindset (Huffington Post): https://www.huffingtonpost.com/entry/5-ways-to-develop-an-investors-mindset_us_5a5f6702e4b0c40b3e5975f3

Investing for Your Future (Cooperative Extension): http://articles.extension.org/pages/10984/investing-for-your-future

New to Investing? Use Dollar-Cost Averaging (U.S. News and World Report): https://money.usnews.com/money/blogs/the-smarter-mutual-fund-investor/2012/10/03/new-to-investing-use-dollar-cost-averaging

Rule of 72 (Investing Answers): http://www.investinganswers.com/financial-dictionary/technical-analysis/rule-72-1615

Rule of 72 Calculator (Good Calculators): https://goodcalculators.com/rule-of-72-calculator/

Time Diversification and Horizon-Based Asset Allocations (Vanguard): http://www.vanguard.com/pdf/icrtd.pdf?2210045172

What are "Ownership" and "Loanership" Investments? (eXtension): http://articles.extension.org/pages/39847/what-are-ownership-and-loanership-types-of-investments

What is the Rule of 72? (Investopedia): https://www.investopedia.com/terms/r/ruleof72.asp

What's the Best Asset Allocation for My Age? (CNN Money): http://money.cnn.com/retirement/guide/investing_basics.moneymag/index7.htm

Web Quest: Short-Term and Long-Term Investment Returns

In this activity, you will conduct an online search to learn about short-term and long-term returns on various investments (e.g., stocks, bonds, and other investments).

Instructions:

1. Go to an online search engine (e.g., Google, Bing) and search for terms such as “investment returns,” “short-term investment returns,” and “long-term investment returns.”
2. Read three articles (not paid advertisements) about investment returns.
3. When you are done reading, complete the table below by listing three key pieces of information that you found.
4. Be prepared to discuss the information that you found with the entire class.

Information Source	**Information About Investment Returns**

Compound Interest Calculator Scenarios

Instructions:

Go to the Dinkytown *Investment Returns* calculator:
https://www.dinkytown.net/java/InvestmentReturn.html

Read the investment returns definitions under the calculator and then complete the following questions based on the case study below using the sliders on the online calculator to input data.

Daryl Sweet has a 45-year time horizon from his current age (22) to full retirement age for Social Security (67). He wants to have at least $1 million saved at that time. Daryl has made no initial investment and expects to invest $300 monthly. He feels comfortable assuming a 7% average rate of return, a 3% inflation rate, a 20% tax rate and no inflation adjustments. How much would he accumulate with a 3% rate of return, a 5% rate of return, a 7% rate of return, and a 9% return?

Rate of Return	Amount of Accumulated Savings	Invested Capital Amount	Simple Interest Amount	Compound Interest Amount
3%				
5%				
7%				
9%				

What types of investments are most likely to provide Daryl with the return needed to reach his goal?

Describe the trends in the numbers in the table above.

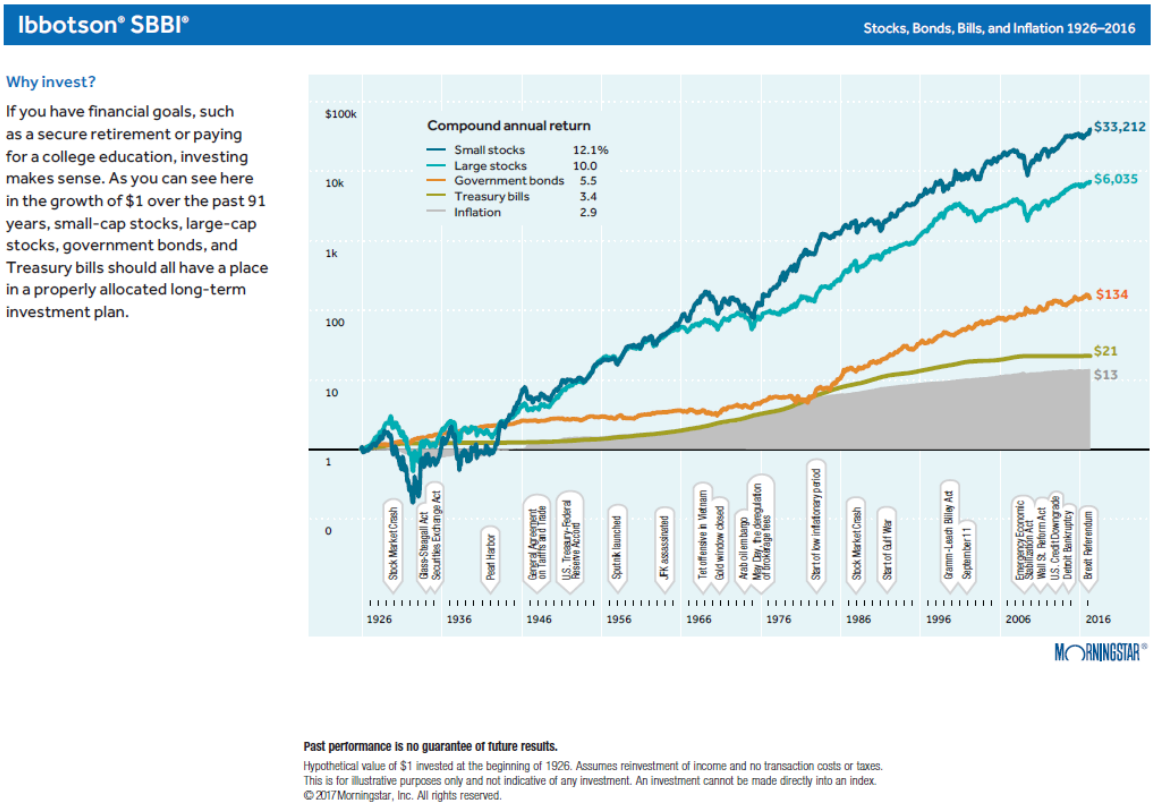
Do a personal investment calculation with real or hypothetical numbers using the *Investment Returns* calculator and describe the results.

What is the take-away message from this activity?

Historical Returns on Investments Data Crunch

Instructions:

Review the Ibbotson® SBBI® chart by Morningstar (http://www.nylinvestments.com/polos/MSTT02j-031874128.pdf) which shows the compound annual return on four different types of investments and the rate of inflation since 1926. Form small groups and work together to answer the following questions.



Which type of investment had the highest compound annual return since 1926?

Which type of investment had the lowest compound annual return since 1926?

Why is there a large difference between the highest and lowest returns shown in the SBBI® figure?

What is the take-away message from the SBBI® figure?

Case Study: Help the Robinsons Make Investment Decisions

Jennifer and Dave Robinson, 32 and 31, have two children, age 7 and 5. Sue is a hairdresser and Jim is self-employed. Together they earn $60,000 a year. They have $1,500 in savings but do not have an adequate emergency fund. Their monthly expenses total $2,500.

Jennifer and Dave have adequate insurance and recently refinanced their mortgage at a low interest rate. They don't want to pay it off because they believe they can earn a higher return on investments. Jennifer's parents generously set aside enough money for the children's future educational expenses.

The Robinsons recently received a $250,000 inheritance. They want to increase their emergency fund and use the remainder to invest for two goals: a nicer home in three years and retirement in 35 years. An online calculator told them they needed to earn a 7% return to meet their retirement goal.

The Robinsons know they must invest carefully. They also know that they need to buy some stocks to grow their money faster than bonds and cash assets. Because retirement is way down the road, they are willing to assume a moderate amount of risk in exchange for the potential for a high return.

Case Study Questions

How much of the inheritance should the Robinsons put in their emergency fund and where should they put this money?

How much of the inheritance should the Robinsons put toward the new house and where should they put this money?

How much of the inheritance should the Robinsons put toward retirement and where should they put this money?

How does the time frame for the Robinson's financial goals affect their investment decisions?

Stocks in the News

Use an online search engine (e.g., Google, Bing) to search for words like “stock market data” and “stocks in the news.” Find one or more articles or blog posts about stock investment returns from major financial news outlets (e.g., Marketwatch, The Street.com, CNBC, the *Wall Street Journal*, CNN, and Bloomberg) and list three key take-aways about current stock market returns and/or historical stock market returns.

Information Source	**Information About Stocks and Stock Market Returns**

Investment Performance Quiz

Multiple Choice Questions:

Circle the correct answer from among the four answers provided.

1. When you diversify investments, this means you are
   a. Moving your money according to the stock market's performance
   b. Investing a set amount in mutual funds every month
   c. Dividing your money among different types of investments
   d. Eliminating investment risk

2. An investment that represents a share of ownership of a company is called a
   a. Bond b. Stock
   c. Certificate of deposit d. Mutual Fund

3. Buying a specific amount of stock shares at regular time intervals is called
   a. Dollar-cost averaging b. Market timing
   c. The buy and hold technique d. Leverage

4. Which of the following investments has historically earned the highest average annual return?
   a. Small company stocks b. Large company stocks
   c. U.S. government bonds d. U.S. Treasury bills

5. About how many years will it take for $1,000 to grow to $2,000 with an average annual return of 7.2%?
   a. 8 years b. 9 years
   c. 10 years d. 12 years

True-False Questions:

Mark "T" for True or "F' for False in the space before each question.

____1. As a guideline for investing, investors should know that the typical economic cycle lasts 7 to 8 years.

____2. Investors can make money on a stock if the price rises and they receive dividends.

____3. The sooner people start investing, the more time their money has to grow.

____4. Of the four investment categories listed on the Morningstar SBBI (Stocks, Bonds, Bills, Inflation) chart, government bonds have the lowest compound annual return.

____5. A frequently cited guideline for the amount of stock in an investor's portfolio is 130 – your age.

The *Investment Performance: Short-Term and Long-Term Returns* lesson plan was written by Dr. Barbara O'Neill, CFP®, Extension Specialist in Financial Resource Management for Rutgers Cooperative Extension (boneill@njaes.rutgers.edu).

Publication Date: May 2018

This publication was supported with funding provided via August 2011 legislation, (N.J.S.A. 17:9-43.2.D) that authorizes New Jersey credit unions to serve as public depositories for the purpose of promoting personal financial literacy education.