

Calculating rate of return

Students calculate different investments' rate of return to measure their performance and then answer questions about investing.

Learning goals

Big idea

Rate of return is a common way to measure and compare the growth of investments.

Essential questions

- What is rate of return?
- How does rate of return help you determine how well investments have performed?

Objectives

- Understand how rate of return helps measure investments' performance
- Use a simple rate of return formula to calculate investments' gains or losses

What students will do



- Calculate the rate of return for different investments.
- Share their thoughts on topics related to investing.

NOTE

Please remember to consider your students' accommodations and special needs to ensure that all students are able to participate in a meaningful way.

KEY INFORMATION

Building block:

-  Executive function
-  Financial knowledge and decision-making skills

Grade level: High school (9-12)

Age range: 13-19

Topic: Save and invest (Investing)

School subject: CTE (Career and technical education), English or language arts, Math

Teaching strategy: Personalized instruction, Simulation

Bloom's Taxonomy level: Apply

Activity duration: 45-60 minutes

National Standards for Personal Financial Education, 2021

Saving: 8-1, 8-4, 12-1, 12-2

Investing: 8-1, 8-2, 8-6, 12-1, 12-3, 12-5, 12-6, 12-9

These standards are cumulative, and topics are not repeated in each grade level. This activity may include information students need to understand before exploring this topic in more detail.

Preparing for this activity

- While it's not necessary, completing the "[Investigating investing](#)" activity first may make this one more meaningful.
- Print copies of all student materials for each student, or prepare for students to access them electronically.
- Make sure students have access to calculators.

What you'll need

THIS TEACHER GUIDE

- [Calculating rate of return \(guide\)](#)
[cfpb_building_block_activities_calculating-rate-return_guide.pdf](#)

STUDENT MATERIALS

- [Calculating rate of return \(worksheet\)](#)
[cfpb_building_block_activities_calculating-rate-return_worksheet.pdf](#)
- Calculators

Exploring key financial concepts

Investing can help your money grow. Calculating rate of return is a useful way to determine how well an investment is doing and to compare one investment to another. Rate of return is the profit or loss on an investment expressed as a percentage. You can calculate the rate of return on typical financial investments (such as stocks and bonds) as well as non-financial investments, such as works of art, vintage cars, or other items. Regardless of what you invest in, it's important to research the investment carefully and to be aware of the risk. An investment's value can rise and fall over time – and it's possible to lose some or all of your money.

Teaching this activity

Whole-class introduction

- Ask students to name some things people invest in.
 - Answers may include stocks, real estate, or classic cars.

TIP

It's important to emphasize that all investments, even savings products, have some level of risk. These risks include how readily investors can get their money when they need it; how fast their money will grow; whether they can lose some, all, or in some cases, more than their initial investment; and how inflation, taxes, market conditions, and other external factors may affect the value of their investment.

- Ask students whether they think all investments will earn the same amount of profit and to share the reason for their answer.
- Ask students why it's important to track how well an investment is doing.
- Explain that calculating rate of return can help them determine how well their investment is making money.
- Read the "Exploring key financial concepts" section to students.
- Be sure students understand key vocabulary:
 - **Annual return:** The profit or loss on an investment over a one-year period.
 - **Bond:** A type of debt. When you buy a bond, you're lending to the issuer, which may be a government, municipality, or corporation. The issuer promises to pay you a specified rate of interest during the life of the bond and to repay the principal – also known as the bond's face value or par value – when the bond "matures," or comes due after a set period.
 - **Certificate of deposit (CD):** A savings tool from a bank or credit union that has a fixed maturity date and a fixed interest rate.
 - **Inflation:** Inflation occurs when the prices of goods and services increase over time.
 - **Invest:** To commit money to earn a financial return; the strategic purchase or sale of assets to produce income or capital gains.
 - **Investment:** Something you spend your money on that you expect will earn a financial return.
 - **Money market deposit account:** Federally insured account at a bank or credit union that offers a higher rate of interest than a savings account, allows for a limited number of transactions monthly, and may require a minimum deposit or minimum account balance.
 - **Mutual fund:** A company that pools money from many investors and invests the money in securities such as stocks, bonds, and short-term debt. The combined holdings of the mutual fund are known as its portfolio. Investors buy shares in mutual funds. Each share represents an investor's part ownership in the fund and the income it generates.
 - **Rate of return:** The profit or loss on an investment expressed as a percentage.
 - **Return:** The profit or loss on an investment.

TIP

Because financial products, terms, and laws change, students should be encouraged to always look for the most up-to-date information.

TIP

Visit CFPB's financial education glossary at consumerfinance.gov/financial-education-glossary/.

- **Risk:** Exposure to danger, harm, or loss.
- **Security:** An investment product such as a stock or bond.
- **Stock:** A type of investment that gives people a share of ownership in a company.
- **Taxes:** Required payments of money to governments, which use the funds to provide public goods and services for the benefit of the community as a whole.

Individual or group work

- Distribute the “Calculating rate of return” worksheet to students.
- Tell students they’ll calculate rate of return on several financial and non-financial investments using the formula on their worksheets.
 - Explain that while students will use the investment’s purchase price to calculate rate of return in this activity, the actual rate of return would also involve adding all the costs related to an investment, such as mortgage interest for a house, to the purchase price.
- Students can work in pairs, but they should complete their own worksheet.
- Once students finish the calculations, they’ll complete a “quick write” task.
- Give them 8-10 minutes to choose and respond to one of the three open-ended prompts about investing:
 - People are often tempted to invest in “get rich quick” schemes. Why might an investor be tempted to do that despite the risks?
 - What types of investments are you most likely to make in your own life? Why do you think these investments would help you reach your goals?
 - Some people don’t invest because it may seem too complicated or they may be afraid of losing money. How would you convince someone that investing is a valuable strategy to help them meet their financial goals?
- Students will write until you say “stop.”

Wrap-up

- Ask for volunteers to share their responses to the quick write and discuss them as a class.
- If time allows, have students discuss the relationship between the rate of return and an investment’s perceived riskiness. Ask students to consider their own comfort with risk.

Suggested next steps

Consider searching for other [CFPB activities](#) that address the topic of investing. Suggested activities include [“Discovering the benefits of investing early”](#) and [“Playing an investment game”](#).

Measuring student learning

Students’ answers on their worksheets and during discussion can give you a sense of their understanding.

This answer guide provides possible answers for the “Calculating rate of return” worksheet. **Keep in mind that students’ answers may vary.** The important thing is for students to have reasonable justification for their answers.

Answer guide

Financial investments

Initial investment	Current value	Net profit or loss	Rate of return
You put \$10,000 in a mutual fund.	The investment grew in value to \$10,500.	\$500	5%
You bought government-issued bonds for \$8,800.	The bonds are now worth \$10,000.	\$1,200	13.6%
You put \$15,000 in a money market deposit account.	The account is now worth \$15,800.	\$800	5.3%
You bought 10 shares of stock for \$12.50 each.	You held the shares for many years and then sold the shares for \$27.15 each for a current total value of \$271.50.	\$14.65 for each share (or a total of \$146.50)	117.2%

Non-financial investments

Initial investment	Current value	Net profit or loss	Rate of return
You bought a house for \$75,000 and spent \$35,000 on renovations.	You owned the house for five years and then sold the house for \$160,000.	\$50,000	45.5%

Initial investment	Current value	Net profit or loss	Rate of return
Your grandfather sold you his 1964 classic car for \$2,200, the price he paid for it. You spent \$10,000 to restore it.	You sold the car for \$20,000.	\$7,800	63.9%
You bought a painting at a garage sale for \$20. You learned it was done by a popular local artist.	You sold the painting for \$1,000.	\$980	4,900%
You bought a limited edition pair of sneakers for \$300.	You sold the unworn sneakers to a collector for \$500.	\$200	66.7%
Your aunt bought 100 collectible stuffed animals for \$5 each while she was a teenager, when the toys were popular.	Ten years later, she sold her collection to a neighbor for \$100.	-\$400 (she lost money)	-80%