

Kahoot: (forthcoming)

Essential Lesson 4

What You Keep

Description: Investors evaluate more than a quoted or gross return. Recurring fund expenses reduce the amount that remains invested; taxes can affect the amount ultimately retained. Students compare hypothetical fund expenses, distinguish taxable investment events, examine basic tax-advantaged account treatment, and apply the concepts to investor scenarios. This lesson is educational, not individualized tax or investment advice.

Objectives

- Calculate simplified net annual returns and compare long-term balances when expense ratios differ.
- Distinguish unrealized appreciation from a realized capital gain and identify dividends as a separate potential taxable payment.
- Explain the conceptual difference between short-term and long-term capital gains without assuming a universal tax rate.
- Describe the basic difference between traditional tax deferral and Roth treatment, subject to account rules.
- Explain the purpose and key limitations of tax-loss harvesting; calculate an illustrative after-tax return using stated assumptions.

Key concepts

Gross return; net return; expense ratio; compounding; cost basis; unrealized gain; realized gain/loss; dividend; holding period; short-term/long-term capital gain; tax-deferred account; Roth account; tax-loss harvesting; wash-sale rule.

Materials and preparation

- Handout 1, The Long-Term Cost of Investment Fees, one copy per student
- Handout 2: Tax scenarios, one copy per student
- Teacher answer keys for Handout 1 and 2, one copy for teacher
- Visual 1: Vocabulary, one copy for the teacher
- Calculators or spreadsheets
- Exercise 7.3 from *Financial Fitness for Life*, Grades 9–12, Lesson 7, “Uncle Sam Takes a Bite,” [pp. 98–99 of supplied PDF (PDF pages 10–11)].
- Before instruction, confirm any jurisdiction-specific (e.g. city, county, state) rules if discussing actual tax filing that you want to share. All numerical tax rates in this lesson are explicitly hypothetical.

Procedures

Part 1: Introduction — What Does an Investor Actually Keep?

1. Begin by asking students to consider the following question: Suppose two investment funds both report an annual return of 7%. Does that mean investors in both funds will earn exactly the same amount?

- Allow students to share their initial responses. Do not confirm an answer immediately.
- Suggested Answer: *Not necessarily. The funds might charge different fees, investors might owe different amounts in taxes, or the investments might be held in different types of accounts.*
- Explain that investors must consider more than an investment's reported return when evaluating its performance.

2. Display **Visual 1: Vocabulary** Part 1: Investment Returns and Fees as needed. Introduce the following vocabulary:

- **Gross return:** The investment return before deducting investment expenses or applicable taxes.
- **Net return:** The return remaining after specified expenses or taxes have been deducted. Clarify that a return described as “net of fees” is not necessarily also net of taxes.
- **Expense ratio:** The annual operating expenses of an investment fund, expressed as a percentage of the fund's assets.

3. Write the following example on the board:

	Fund A	Fund B
Gross annual return	7.0%	7.0%
Annual expense ratio	0.2%	1.2%
Simplified net annual return	6.8%	5.8%

- Ask: Which investor retains more of the fund's gross return?
- Answer: *The investor in Fund A because the fund has lower annual expenses.*
- Explain that today's lesson examines two factors that affect the amount an investor ultimately retains: investment fees and taxes.

Part 2: The Long-Term Cost of Investment Fees

4. Distribute Student **Handout 1, The Long-Term Cost of Investment Fees.**

- Review the scenario with students. Explain that both investors begin with \$10,000, contribute an additional \$2,000 at the end of every year, and earn the same hypothetical gross annual return of 7%. The only difference between the funds is their annual expense ratio.
- Emphasize that keeping the other assumptions identical allows students to isolate the effect of investment fees.
- Direct students to complete Questions 1 and 2 on the handout. Give them time to complete and then review their responses:
 - Question 1: *The expense ratios differ by 1 percentage point.*
 - Question 2: *Fund B has a lower net return because a larger portion of its gross return is consumed by annual expenses.*

- Ask: Is a difference of one percentage point likely to matter very much over a single year?
 - Suggested response: *It may appear relatively small over one year, particularly when the starting investment is small.*
- Follow with: What might happen if that difference continues for 30 years?
 - Suggested response: *The difference could become much larger because the investor pays higher expenses repeatedly and has less money remaining to earn future returns.*

5. Remind students of the concept of **compounding**, whereby investment earnings generate additional earnings over time.

- Recall the discussion of compounding in the Foundations unit. Ask: Why does the length of time money remains invested matter?
 - Suggested response: *The longer money remains invested, the more opportunities its earnings have to generate additional earnings.*
- Explain that compounding works on the amount of money remaining in an investment account. When expenses are deducted, that money is no longer available to earn future returns.
- Explain that fees affect compounding in two ways: they reduce the amount retained in the current year and the amount available to generate earnings in subsequent years.
- Tell students that this cumulative effect is often called fee drag, the reduction in investment growth caused by recurring investment expenses.
- Ask: Why might the long-term cost of an investment fee be greater than the sum of the annual fees themselves?
 - Suggested response: *Money deducted for fees is no longer invested, so the investor also loses the potential future earnings on that money.*

6. Now direct students to Question 3 on Handout 1. Have them calculate the balance in each fund after the first year, including the additional \$2,000 contribution.

- Write the calculations on the board:
Fund A: $\$10,000(1.068) + \$2,000 = \$12,680$

$$\text{Fund B: } \$10,000(1.058) + \$2,000 = \$12,580$$

- Ask: How much more does the investor in Fund A have after the first year?
 - Answer: *\$100.*
- Explain that the difference reflects the one-percentage-point difference in the simplified annual returns applied to the initial \$10,000.

7. Now direct students to Question 4 on Handout 1.

- Explain that **future value** (FV) is the amount an investment is projected to be worth at a specified point in the future. In this example, future value includes both the growth of the initial \$10,000 investment and the growth of the additional \$2,000 contributed each year.
- Display the formula provided on the handout:

$$FV = P(1 + r)^n + C\left(\frac{(1+r)^n - 1}{r}\right)$$

- Review each component as follows:
 - FV: Future value, or the projected ending account balance.
 - P: Principal, or the initial amount invested (i.e. \$10,000).
 - r: Annual net rate of return, expressed as a decimal (i.e. 0.068 for Fund A).
 - n: Number of years the money remains invested (e.g. 10, 20, or 30).
 - C: Annual contribution made at the end of each year (\$2,000).
- Explain that the formula has two parts. The first calculates the future value of the original \$10,000 investment; the second calculates the future value of the additional annual contributions.
- Demonstrate how to substitute Fund A's assumptions:

$$FV = 10,000(1.068)^{30} + 2,000\left(\frac{(1.068)^{30}-1}{0.068}\right)$$

- Explain that students will use the same formula to calculate Fund B's ending balance, substituting its net annual return of 5.8% (0.058). They will also change the number of years to calculate balances for the 10-, 20-, and 30-year periods.
- Direct students to complete the remaining calculations in Question 4, using the formula to determine the projected balances for both funds after 10, 20, and 30 years. Allow students to use calculators or spreadsheets.
- Give students time to work independently or in pairs before displaying the answers. Circulate to assist with substituting the correct values and entering the formula. Remind students that the annual return must be expressed as a decimal.
- Depending on available time and students' mathematical preparation, teachers may provide the projected balances and have students calculate and interpret the differences rather than independently evaluate the entire formula.

8. Display the completed comparison [answers]:

Years invested	Fund A (6.8%)	Fund B (5.8%)	Difference
10	\$46,680.13	\$43,688.73	\$2,991.40
20	\$117,498.09	\$102,891.41	\$14,606.69
30	\$254,225.61	\$206,930.85	\$47,294.77

- Debrief with the following questions:
 - How much more does the investor in Fund A have after 30 years?
 - Answer: Approximately \$47,295.
 - Did the investor in Fund A contribute more money?
 - Answer: *No. Both investors began with the same amount and made identical annual contributions.*
 - What explains the difference?
 - Answer: *Fund A's lower expenses allow more money to remain invested and compound over time.*
 - Compare the difference after 10 years with the difference after 30 years. What do you notice?
 - Answer: *The difference grows substantially over time. After 10 years, it is approximately \$2,991; after 30 years, it is approximately \$47,295.*

- Reinforce that the difference is not simply the result of paying more in annual fees. It also reflects the future earnings that could have been generated on the money deducted for those fees.

9. Direct students to complete Questions 5 and 6 on Handout 1. Allow approximately three minutes for students to develop their responses independently or in pairs before discussing them as a class.

- Review Question 5: Why do the funds have different ending balances even though both investors contributed the same amount?
 - Suggested response: *Fund B's higher annual expenses reduce the amount remaining invested each year. As a result, less money is available to generate future returns, and the difference grows over time.*
- Review Question 6: Why does the dollar difference between the two funds become larger over time?
 - Suggested response: *The effects of recurring fees compound. The investor loses both the money deducted for expenses and the potential future earnings on that money.*
- Ask: If two funds have similar investment objectives and strategies, why should an investor compare their expense ratios?
 - Suggested response: *Higher expenses reduce the return retained by the investor. When other characteristics are similar, a lower expense ratio allows more of the investment's gross return to remain invested.*
- Ask: Does this mean the fund with the lowest expense ratio is always the most appropriate investment?
 - Suggested response: *No. Investors must also consider investment strategy, risk, diversification, financial goals, and time horizon. A fund's expense ratio is one factor in evaluating its suitability.*
- Ask: What assumption in our calculations might not hold in the real world?
 - Suggested response: *We assumed that both funds earn a constant 7% gross return every year. Actual investment returns fluctuate, and the funds may perform differently.*
- Conclude by emphasizing that the calculations use hypothetical returns and a simplified treatment of expenses. The projected balances are illustrative, not guaranteed. The purpose of the activity is to isolate and demonstrate the cumulative effect of investment fees on long-term growth.

Part 3: Investment Taxes — When Does a Gain Become Taxable?

10. Transition by asking: We have examined how investment fees affect returns. What else might reduce the amount an investor ultimately keeps?

- Suggested response: *Taxes.*
- Explain that different types of investment income and transactions may receive different tax treatment. The following examples focus on general U.S. federal income-tax concepts using simplified classroom assumptions.

11. Display **Visual 1: Vocabulary**, Part 2: Investment Transactions and Income as needed. Introduce **cost basis** (or sometimes simply referred to as “basis”), the amount used to determine a gain or loss when an investment is sold. Explain that the examples in this lesson use the original purchase price as the basis and ignore adjustments that may apply in actual circumstances.

- Verbally give this scenario: An investor purchases shares for \$1,000. One year later, the shares are worth \$1,250.
- Ask: How much has the investment increased in value?
 - Answer: \$250.
- Ask: Has the investor necessarily sold the shares?
 - Answer: *No*.
- Explain that an investment's market value can increase or decrease while the investor owns it. Define an **unrealized gain** as an increase in an investment's value while the investor continues to hold it. In this example, the investor has a \$250 unrealized gain because the shares have increased in value but have not been sold.
- Define a **realized gain** as a gain generally established when an investment is sold for more than its adjusted cost basis. If the investor sells the shares for \$1,250, the \$250 increase becomes a realized gain.
- Define **capital gains tax** as a tax on the profit realized when an investment or other capital asset is sold for more than its cost basis. Emphasize that, in this example, the investor has a \$250 capital gain—not \$1,250 in taxable profit.
- Explain that an increase in market value does not ordinarily trigger capital gains tax while the investor continues holding the investment. In a taxable investment account, selling an investment at a gain may create a capital gains tax obligation.

12. Distribute **Handout 2: Taxes and What the Investor Keeps** and direct students to complete Question 1.

- Continue the example: The investor sells the shares for \$1,250.
- Write the following on the board:
Sale price – Cost basis = Realized capital gain
 $\$1,250 - \$1,000 = \$250$
- Ask: What changed between the first example and this one?
 - Suggested response: *The investor sold the investment, turning the \$250 unrealized gain into a realized capital gain.*
- Direct students to complete Question 2. Define a **capital loss** as a loss that generally occurs when an investment is sold for less than its adjusted cost basis.

13. Introduce the concept of a **dividend** as a distribution of earnings or other funds from a corporation to its shareholders (people or entities that own shares of the corporation).

- Explain that investors may receive dividends while continuing to own their shares. Dividends and capital gains are two different forms of investment income (money earned from owning or selling investments). A dividend is a distribution received from the corporation; a capital gain is the profit realized when an investment is sold for more than its cost basis.
- Ask: Must an investor sell shares to receive a dividend?

- Answer: *No. An investor can receive a dividend while continuing to own the shares.*
- Direct students to complete Question 3. Review the answer: The investor receives \$40 in dividend income and continues to own the shares.
- Explain that dividends can receive different federal income tax treatment depending on their classification:
 - **Ordinary dividends** are generally taxed at the investor's applicable ordinary income tax rates.
 - **Qualified dividends** are dividends that meet specific IRS requirements and may be taxed at the preferential federal tax rates that apply to long-term capital gains.
- Emphasize that students should not assume all dividends are taxed at the same rate. The tax treatment depends on the type of dividend and the investor's circumstances.

14. Define the concept of **holding period** as the length of time an investor owns an asset before selling it.

- Explain the general U.S. federal distinction:
 - **Short-term capital gain:** A gain on an asset generally held for one year or less.
 - **Long-term capital gain:** A gain on an asset generally held for more than one year.
- Tell students that short-term and long-term gains may be subject to different tax treatment. The applicable rate depends on the taxpayer's circumstances and the type of asset.
- Present two examples:
 - Investor A sells stock at a gain after eight months.
 - Investor B sells stock at a gain after eighteen months.
- Ask students to classify each gain.
 - Answer: *Investor A has a short-term gain; Investor B has a long-term gain.*
- Direct students to complete Question 4.

15. Ask: Why might two investors who realize the same dollar gain owe different amounts in taxes?

- Suggested responses: *They may have different holding periods, taxable incomes, applicable tax rates, or account types. The nature of the investment income may also differ.*
- Explain that an investment's gross return does not necessarily equal the amount an investor retains after applicable taxes.
- Transition to the next section by noting that the account in which an investment is held can also affect its tax treatment.

Part 4: Tax-Advantaged Investment Accounts

16. Direct students to Financial Fitness for Life, Grades 9–12, Lesson 7: “Uncle Sam Takes a Bite,” **Exercise 7.3**, “Tax-Saving Strategies,” page 98 of the original publication (page 10 of the supplied PDF). Have students read the entire article.

- Explain that the article describes several ways taxpayers may reduce their taxable income, including deductions and contributions to certain retirement accounts.

- After students finish reading, debrief with the following questions:
 - According to the article, how can contributions to an employer-sponsored retirement account affect an employee's taxable income?
 - Suggested response: Certain retirement contributions may reduce the income subject to tax in the year the contribution is made.
 - What is an IRA, and why does the article include it as a tax-saving strategy?
 - Suggested response: An Individual Retirement Account (IRA) is an account used to save for retirement. Depending on the type of IRA and the taxpayer's circumstances, contributions or investment earnings may receive favorable tax treatment.
 - How does this reading connect to our earlier discussion of investment fees and returns?
 - Suggested response: Fees and taxes can both reduce the amount an investor ultimately keeps. Retirement accounts may provide tax advantages that affect the investor's after-tax outcome.
- Explain that the article introduces retirement-saving arrangements that may provide tax advantages. Its purpose here is to reinforce the relationship between retirement contributions and taxes, not to provide current contribution limits or individualized tax guidance. Some rules and figures in the publication are dated; students should not treat them as current tax guidance.

17. Display **Visual 1: Vocabulary**, Part 3: Retirement Accounts and Taxes as needed. Define a **tax-advantaged account** as an account that receives specified benefits under the tax code, such as postponing taxes on investment earnings or allowing qualifying withdrawals to be received tax-free.

- Refer students back to the retirement-saving strategies discussed in Exercise 7.3. Explain that retirement accounts can affect not only how much money an investor contributes, but also when taxes are paid on contributions and investment earnings.
- Introduce **tax deferral**, which means postponing payment of a tax until a later date. Explain that, in a tax-deferred retirement account, investment earnings generally are not taxed each year as they accumulate within the account. Instead, applicable taxes are generally paid when taxable withdrawals occur.
- Review the distinction between traditional and Roth tax treatment:
 - **Traditional retirement account:** Eligible contributions may reduce current taxable income, depending on the account type and applicable rules. Investment earnings generally grow tax-deferred, and taxable withdrawals are generally subject to income tax.
 - **Roth retirement account:** Contributions are generally made with after-tax dollars (money on which applicable income taxes have already been paid). Contributions do not generally reduce current taxable income, but qualified withdrawals—including investment earnings—may be received tax-free.
- Ask: What is the primary difference between traditional and Roth tax treatment?
 - Suggested response: *Traditional treatment may provide a tax benefit when money is contributed, with applicable taxes generally paid when it is withdrawn. Roth*

treatment generally uses after-tax contributions but may allow qualified withdrawals to be received tax-free.

- Ask: Why might tax deferral benefit a long-term investor?
 - Suggested response: *When investment earnings are not taxed annually within the account, more money can remain invested and potentially compound over time. Taxes may still be owed when the money is withdrawn.*
- Ask: Does a tax-advantaged account eliminate investment risk or guarantee a higher return?
 - Answer: *No. Tax advantages affect the treatment of contributions, earnings, or withdrawals; they do not eliminate investment risk or guarantee investment performance.*
- Emphasize that tax-deferred does not mean tax-free. Also clarify that specific rules vary by account type, contribution eligibility, and withdrawal circumstances. Not every traditional contribution is deductible, and not every Roth withdrawal qualifies for tax-free treatment.
- Conclude by connecting this discussion to the lesson's central question: An investor's ending account balance and the amount the investor ultimately keeps are not necessarily the same. Investment fees, account type, and applicable taxes can all affect the investor's final after-tax outcome.

18. Direct students to complete 8 and 9, using the concepts introduced in Step 17. Allow students time to respond independently or in pairs, then review their answers as follows:

- Question 8: Why might an investor prefer traditional tax treatment over Roth treatment, or vice versa?
 - Suggested response: *An eligible investor may value the current tax deduction associated with traditional contributions. Another investor may prefer paying taxes on contributions now in exchange for potentially tax-free qualified Roth withdrawals. The choice depends on individual circumstances, applicable account rules, and current versus expected future tax circumstances.*
- Question 9: If an investor purchases a risky stock inside a Roth IRA, does the account's tax treatment eliminate the risk of losing money?
 - Answer: *No. The account's tax treatment does not change the investment's underlying market risk.*
- Reinforce the distinction between the account, which determines certain tax rules, and the investment, which determines the assets held and the risks and potential returns associated with them.

Part 5: After-Tax Returns and Tax-Loss Harvesting

19. Display **Visual 1: Vocabulary**, Part 4: Managing Taxable Investment Gains as needed. Continue onto Handout 2, Part 2. Present the following example: An investor purchases an investment for \$2,000 and later sells it for \$2,500. For this exercise only, assume that a hypothetical 15% tax applies to the entire realized gain. Explain that this is a fictional classroom rate used to practice the calculation, not a statement of the investor's actual tax liability.

- Ask the following questions:
 - What is the realized capital gain?

- Answer: \$500.
- What is the hypothetical tax paid?
 - Answer: $\$500(0.15) = \$75$
- How much of the gain remains after the hypothetical tax?
 - Answer: $\$500 - \$75 = \$425$
- Direct students to complete Question 5. Define **after-tax gain** as the gain remaining after subtracting the applicable tax assumed in the calculation.

20. Continue the example by introducing a second investment that has declined in value by \$300 but has not been sold.

- Ask: Can the investor automatically subtract that \$300 decline from the \$500 realized gain?
 - Answer: *No. The \$300 decline is an unrealized loss.*
- Direct students to complete Question 6.
- Explain that an unrealized decline in an investment's market value does not, by itself, create a realized capital loss that can offset a taxable capital gain.

21. Now assume the investor *sells* the second investment and realizes the \$300 loss.

- Define **tax-loss harvesting** as a strategy involving the realization of an investment loss to obtain a potential tax benefit, such as offsetting eligible realized capital gains.
- Under the simplified assumptions in Question 7, write: $\$500 - \$300 = \$200$
- Ask the following:
 - What is the remaining net capital gain?
 - Answer: \$200.
 - What is the hypothetical 15% tax on that amount?
 - Answer: $\$200(0.15) = \$30$
- Explain that the example illustrates the potential effect of an eligible realized loss. Actual tax treatment depends on applicable rules and the investor's circumstances.

22. Introduce the **wash-sale rule**, a U.S. federal tax rule that can disallow a loss deduction when an investor sells a security at a loss and acquires substantially identical securities within the applicable period surrounding the sale.

- Explain that investors cannot assume they can sell a security to claim a loss and immediately repurchase substantially identical securities while retaining the intended tax deduction.
- Ask: Why should an investor consider the wash-sale rule before selling an investment at a loss and quickly buying it back?
- Suggested response: *The transaction may trigger the wash-sale rule, preventing the investor from claiming the loss deduction as intended.*

- Direct students to finish Question 7.
23. Conclude by asking students to consider the broader investment decision.
- Ask: Should an investor sell an investment solely to obtain a tax benefit?
 - Suggested response: *Not necessarily. The investor should also consider whether selling is consistent with their investment goals, risk tolerance, diversification, time horizon, and other costs.*
 - Emphasize that taxes and fees are important considerations, but they should be evaluated alongside the investment's overall characteristics.

Closure and Assessment

24. Direct students to complete the exit ticket question, included at the bottom of Handout 2, independently: Why can two investments with the same gross return produce different amounts retained by investors? Identify one additional piece of information you would need before comparing their after-tax outcomes. Allow students to share their responses.

- Suggested response: *Different expense ratios can reduce the amount remaining invested and available to compound. Taxes on distributions or realized gains may also affect the amount retained. To compare after-tax outcomes, an investor would need information such as the account type, applicable tax treatment, holding period, or expense ratio.*
- Collect Handouts 1 and 2 or review responses using the teacher answer key.

25. Close with the lesson's central takeaway: An investment's reported return is only one part of its financial outcome. Fees reduce the amount that remains invested and can compound into substantial long-term differences. Taxes may further affect the amount an investor retains, depending on the investment, transaction, account, and investor's circumstances. Understanding these factors helps investors evaluate investment alternatives more completely.

HANDOUT 1: The Long-Term Cost of Investment Fees

Name: _____

Instructions: Work on the questions below as your teacher instructs.

Scenario: Two investors each start with \$10,000 and add \$2,000 at the END of every year for 30 years. Their funds earn the same hypothetical 7% gross annual return, but have different annual expense ratios. For this simplified exercise, net annual return = gross return – expense ratio. Assume constant annual returns, annual compounding, no withdrawals, and no taxes.

Assumption	Fund A	Fund B
Starting investment	\$10,000	\$10,000
End-of-year contribution	\$2,000	\$2,000
Gross annual return	7.0%	7.0%
Annual expense ratio	0.2%	1.2%
Simplified net return	_____	_____

1. What is the expense-ratio difference in percentage points?
2. Why do the funds have different net returns despite identical gross returns?
3. Calculate the balance after year 1, including the year-end contribution:

$$\text{Fund A: } \$10,000 \times (1 + \underline{\hspace{1cm}}) + \$2,000 = \underline{\hspace{2cm}}$$

$$\text{Fund B: } \$10,000 \times (1 + \underline{\hspace{1cm}}) + \$2,000 = \underline{\hspace{2cm}}$$

4. Use a calculator/spreadsheet or the FV formula given by your teacher below to complete the table. Round to the nearest dollar.

Years	Fund A	Fund B	Difference
10			
20			
30			

5. Explain why the difference grows over time.

6. Does the lower-fee fund automatically fit every investor? What else matters?

HANDOUT 2: Taxes and What the Investor Keeps

Name: _____

Directions: Use the assumptions given in each question. The rates are fictional classroom assumptions, not tax advice or a statement of current tax brackets. Work on the question as your teacher directs.

Part 1. Identify the event

1. An investor buys shares for \$1,000. Their market value rises to \$1,250, but the investor does not sell. Is the \$250 appreciation realized or unrealized?
2. The investor later sells those shares for \$1,250. Ignoring fees, what is the realized gain?
3. The investor receives a \$40 cash dividend while still holding another stock. Must shares be sold for a dividend to be received?
4. A stock is sold at a gain after 8 months; another is sold at a gain after 18 months. Which gain is generally short-term and which long-term for U.S. federal tax classification?

Part 2. Illustrative after-tax comparison

An investor buys an asset for \$2,000 and sells it for \$2,500. Assume a hypothetical 15% tax applies to the entire \$500 realized gain and ignore all other taxes, deductions, and transaction costs.

5. Realized gain = _____

Illustrative tax = _____

After-tax gain = _____

6. Another investment has a \$300 unrealized loss. Can the investor simply subtract that unsold decline from the realized \$500 gain in this example? Explain.

7. Suppose instead the investor sells that second investment and realizes a \$300 capital loss. Assuming the loss is eligible to offset the gain and ignoring all other rules, what is the remaining net capital gain? What would a hypothetical 15% tax on that net gain equal?

Net gain = _____ Hypothetical tax = _____

Why should an investor consider the wash-sale rule before selling and quickly repurchasing substantially identical securities?

Part 3. Account comparison

Read the Financial Fitness for Life, Lesson 7, Exercise 7.3 as instructed by your teacher. Then answer the following questions.

8. In general terms, contrast when tax is paid on traditional tax-deferred contributions/withdrawals and Roth contributions/qualified withdrawals.

9. Does a Roth account guarantee that the investments inside it will earn a positive return? Why or why not?

Exit ticket

Why can two investments with the same gross return produce different amounts retained by investors? Identify one additional piece of information you would need before comparing their after-tax outcomes.

Visual 1: Vocabulary

Part 1: Investment Returns and Fees

Term	Definition
Gross return	Investment return before deducting investment expenses or applicable taxes.
Net return	Return remaining after specified expenses or taxes have been deducted. A return that is net of fees is not necessarily net of taxes.
Expense ratio	A fund's annual operating expenses, expressed as a percentage of its assets.
Compounding	The process through which investment earnings generate additional earnings over time.
Fee drag	The reduction in investment growth caused by recurring investment expenses, including the future earnings that could have been generated on money deducted for fees.
Future value (FV)	The amount an investment is projected to be worth at a specified point in the future.

Part 2: Investment Transactions and Income

Term	Definition
Cost basis	The amount used to determine a gain or loss when an investment is sold. It is generally based on the purchase price, with adjustments when applicable.
Unrealized gain	An increase in an investment's value while the investor continues to hold it.
Realized gain	A gain generally established when an investment is sold for more than its adjusted cost basis.
Capital loss	A loss generally established when an investment is sold for less than its adjusted cost basis.
Capital gains tax	A tax on profit realized from selling an investment or other capital asset for more than its cost basis.
Dividend	A distribution of earnings or other funds from a corporation to its shareholders.
Ordinary dividend	A dividend generally subject to the investor's applicable ordinary income tax rates.
Qualified dividend	A dividend that meets specified requirements and may receive preferential federal income tax treatment.
Holding period	The length of time an investor owns an asset before selling it.
Short-term capital gain	A gain on an asset generally held for one year or less.
Long-term capital gain	A gain on an asset generally held for more than one year.

Visual 1, continued.

Part 3: Retirement Accounts and Taxes

Term	Definition
Tax-advantaged account	An account that receives specified tax benefits, such as postponing taxes on earnings or allowing qualifying withdrawals to be received tax-free.
Tax deferral	Postponing payment of a tax until a later date.
Traditional retirement account	A retirement account in which eligible contributions may reduce current taxable income, earnings generally grow tax-deferred, and taxable withdrawals are generally subject to income tax.
Roth retirement account	A retirement account generally funded with after-tax contributions, with qualified withdrawals potentially received tax-free.
After-tax gain	The gain remaining after subtracting the applicable tax assumed in a calculation.

Part 4: Managing Taxable Investment Gains

Term	Definition
Tax-loss harvesting	A strategy involving the realization of an investment loss to obtain a potential tax benefit, such as offsetting eligible realized capital gains.
Wash-sale rule	A U.S. federal tax rule that can disallow a loss deduction when an investor sells a security at a loss and acquires substantially identical securities within the applicable period surrounding the sale.

TEACHER ANSWER KEY

Handout 1

1. Fund A 6.8%; Fund B 5.8%. Expense-ratio difference: 1.0 percentage point.
2. Annual expenses reduce the return retained by the investor.
3. Fund A: \$12,680; Fund B: \$12,580.

Years	Fund A (6.8%)	Fund B (5.8%)	Difference
10	\$46,680.13	\$43,688.73	\$2,991.40
20	\$117,498.09	\$102,891.41	\$14,606.69
30	\$254,225.61	\$206,930.85	\$47,294.77

Worked 30-year calculation:

Fund A = $10,000(1.068)^{30} + 2,000[((1.068)^{30} - 1)/0.068]$ = \$254,225.61.

Fund B = $10,000(1.058)^{30} + 2,000[((1.058)^{30} - 1)/0.058]$ = \$206,930.85.

Difference = \$47,294.77.

Calculate before rounding; rounded-column subtraction may differ by \$1.

4. Fees reduce money remaining invested and therefore reduce future returns on that money.
5. No; also consider risk, diversification, goals, time horizon, liquidity, strategy, and other costs.

Handout 2

1. Unrealized gain of \$250.
2. Realized gain of \$250.
3. No; a dividend may be paid while shares are held, and tax treatment depends on circumstances.
4. Eight months: generally short-term; 18 months: generally long-term.
5. \$500 gain; \$75 hypothetical tax; \$425 after-tax gain.
6. No; the unsold decline is unrealized and does not itself offset the realized gain.
7. $\$500 - \$300 = \$200$ net gain; $15\% \times \$200 = \$30$ hypothetical tax. The wash-sale rule can disallow a loss deduction when substantially identical securities are purchased within the applicable window. Actual offset and deduction treatment is subject to rules not modeled here.
8. Traditional tax-deferred arrangements generally postpone tax on eligible contributions/earnings until taxable withdrawals; Roth contributions generally use after-tax dollars, with qualified withdrawals potentially tax-free. Specific account, contribution, and withdrawal rules apply.
9. No; the tax treatment of an account does not eliminate investment risk.

Exit ticket: Expenses reduce retained returns and compounding; taxable distributions or realized gains and account treatment may affect after-tax amounts. Ask about expenses, holding period, account type, tax situation, or investment objectives.