

Interest Showdown

Compare two ways money can grow.

GRADE 8 • TEKS 8.12.D

8.12.D "calculate and compare simple interest and compound interest earnings;"

NAME _____

DATE _____

TWO INTEREST RULES

For simple interest, use $I = P \times r \times t$, where P is the starting amount, r is the rate written as a decimal, and t is time in years. For compound interest compounded yearly, multiply the balance by $(1 + r)$ each year, then subtract the starting amount to find the earnings. Compare the interest earnings, not just the final balances.

WORKED EXAMPLE

A savings account has \$270 at 10% simple interest for 3 years. Find the interest earnings and final balance.

1. Write the rate as a decimal: $10\% = 0.10$.
2. Find the interest: $I = 270 \times 0.10 \times 3 = 81$.
3. Find the final balance: $270 + 81 = 351$.

Answer: Interest earnings: \$81. Final balance: \$351.

PRACTICE 6 problems

- 1** Find the simple interest earnings on \$120 at 5% for 1 year.

ANSWER _____

- 2** A \$200 deposit earns 7% simple interest for 2 years. Find the interest earnings and final balance.

ANSWER _____

- 3** A \$100 deposit earns 20% compound interest each year for 2 years. Find the interest earnings.

ANSWER _____

- 4** A \$160 deposit earns 25% compound interest each year for 2 years. Find the final balance.

ANSWER _____

- 5** An \$80 account earns 50% interest for 1 year. How much interest will it earn under simple interest? How much will it earn under yearly compound interest?

ANSWER _____

- 6** A \$100 deposit earns 15% interest for 2 years. Compare the earnings under simple interest and yearly compound interest. How much more does one method earn?

ANSWER _____

APPLY IT Show your work

1

Maya is choosing between two savings accounts for money she earned pet-sitting. Each account starts with \$240 and pays 5% per year for 2 years. Account S uses simple interest, and Account C compounds interest yearly. How much interest will each account earn, and which account earns more?

WORK SPACE

ANSWER _____

2

A gaming club has \$500 for new controllers. It compares two options that both pay 4% per year for 2 years, one with simple interest and one with interest compounded yearly. Find the interest earnings for each option and tell which option earns more.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Two accounts each start with \$320 and pay 25% per year for 2 years. One uses simple interest and one compounds interest yearly. Calculate the earnings for each account. Then explain why one account earns more.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the simple interest earnings on \$120 at 5% for 1 year.	\$6
2	A \$200 deposit earns 7% simple interest for 2 years. Find the interest earnings and final balance.	Interest earnings: \$28. Final balance: \$228.
3	A \$100 deposit earns 20% compound interest each year for 2 years. Find the interest earnings.	\$44
4	A \$160 deposit earns 25% compound interest each year for 2 years. Find the final balance.	\$250
5	An \$80 account earns 50% interest for 1 year. How much interest will it earn under simple interest? How much will it earn under yearly compound interest?	Simple interest: \$40. Compound interest: \$40.
6	A \$100 deposit earns 15% interest for 2 years. Compare the earnings under simple interest and yearly compound interest. How much more does one method earn?	Simple interest: \$30. Compound interest: \$32.25. Compound interest earns \$2.25 more.

PART 2 • APPLY IT

- Account S earns \$24. Account C earns \$24.60. Account C earns \$0.60 more.** For Account S, calculate $240 \times 0.05 \times 2$. For Account C, find the balance after each year, then subtract \$240 from the final balance.
- Simple interest earns \$40. Compound interest earns \$40.80. Compound interest earns \$0.80 more.** Simple interest is $500 \times 0.04 \times 2$. For compound interest, the balance grows from \$500 to \$520 after one year and to \$540.80 after the second year.

CHALLENGE

Simple interest earnings: \$160. Compound interest earnings: \$180. Compound interest earns \$20 more because the second year's interest is calculated on the larger balance after the first year's interest is added.

Accept equivalent decimal money forms, such as 24.60 for \$24.60. For compound-interest items, accept correct year-by-year work or repeated multiplication by the yearly growth factor.