LESSON MAKER PRO

Interest Showdown

Compare money earned with two interest methods.

GRADE 7 · TEKS 7.13.E

7.13.E "calculate and compare simple interest and compound interest earnings; and"

NAME _____ DATE _____

SIMPLE OR COMPOUND?

Simple interest is based only on the original principal. Use I = P x r x t for simple interest, where r is written as a decimal. Compound interest adds each year's interest to the balance, so multiply the balance by (1 + r) each year, then subtract the principal to find the earnings.

WORKED EXAMPLE

An $80 deposit earns 5% interest per year for 2 years. Find the simple interest and the compound interest earnings.

1. Simple interest: I = 80 x 0.05 x 2 = 8
2. Compound, after year 1: 80 x 1.05 = 84
3. Compound, after year 2: 84 x 1.05 = 88.20
4. Compound earnings: 88.20 - 80 = 8.20, so compound earns 0.20 more.

Answer: Simple interest: $8. Compound interest earnings: $8.20.

PRACTICE 6 problems

1 Find the simple interest on $300 at 4% per year for 1 year.

ANSWER _____

2 A $100 account earns 10% compound interest each year for 3 years. How much interest does it earn?

ANSWER _____

3 A $600 deposit earns 7% simple interest per year for 4 years. Find the total balance after 4 years.

ANSWER _____

4 A $500 deposit earns 20% interest per year for 3 years. Compare the interest earned with simple interest and annual compound interest.

ANSWER _____

5 A $900 account earns 3% simple interest for 1 year. What is the balance after the interest is added?

ANSWER _____

6 A $400 account earns 25% compound interest each year for 3 years. How much interest does it earn?

ANSWER _____

APPLY IT Show your work

1 The student council deposits $400 from ticket sales in an account that earns 10% interest each year for 3 years. How much would the account earn with simple interest? How much would it earn with annual compound interest? Which earns more?

WORK SPACE

ANSWER _____

2 Noah saves $200 in an account while saving for a bike. The account earns 10% interest each year for 4 years. Compare the earnings from simple interest and annual compound interest.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A savings account starts with $800 and earns 10% interest per year for 3 years. How much more does annual compound interest earn than simple interest? Explain why.

WORK SPACE AND ANSWER

ANSWER KEY

Interest Showdown

GRADE 7 · TEKS 7.13.E

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the simple interest on $300 at 4% per year for 1 year.	**$12**
2	A $100 account earns 10% compound interest each year for 3 years. How much interest does it earn?	**$33.10**
3	A $600 deposit earns 7% simple interest per year for 4 years. Find the total balance after 4 years.	**$768**
4	A $500 deposit earns 20% interest per year for 3 years. Compare the interest earned with simple interest and annual compound interest.	**Simple interest: $300. Compound interest: $364. Compound interest earns $64 more.**
5	A $900 account earns 3% simple interest for 1 year. What is the balance after the interest is added?	**$927**
6	A $400 account earns 25% compound interest each year for 3 years. How much interest does it earn?	**$381.25**

PART 2 · APPLY IT

1. **Simple interest earns $120. Compound interest earns $132.40. Compound interest earns $12.40 more.** For simple interest, calculate 400 x 0.10 x 3. For compound interest, multiply 400 by 1.10 three times and subtract 400.
2. **Simple interest earns $80. Compound interest earns $92.82. Compound interest earns $12.82 more.** Calculate simple interest with 200 x 0.10 x 4. For compound interest, find 200 x 1.10 x 1.10 x 1.10 x 1.10, then subtract 200.

CHALLENGE

Simple interest earns $240. Compound interest earns $264.80, so it earns $24.80 more because each year's interest is added to the balance before the next year's interest is calculated.

Accept equivalent dollar amounts when the value is correct, such as $33.1 for $33.10. For compound interest, accept correct repeated multiplication or use of an exponent, as long as the final earnings are correct.