COMPOUND INTEREST AND SAVING · PART 3 OF 8 · AGES 13+

Simple vs Compound Interest

The same 1,000 at the same example rate of 5% a year, worked out both ways. The only difference is what the interest is calculated on.

Simple	Compound
INTEREST IS WORKED OUT ON	
Only the original 1,000 (the principal), every single year.	The principal plus all the interest added so far.
FORMULA, ADDED YEARLY	
A = P(1 + rt), so A = 1,000 × (1 + 0.05t)	A = P(1 + r)^t, so A = 1,000 × 1.05^t
INTEREST IN YEAR 2	
50, exactly the same as in year 1.	52.50, because it is 5% of 1,050.
AFTER 10 YEARS	
1,500 (500 of interest)	1,628.89 (628.89 of interest)
AFTER 20 YEARS	
2,000 (1,000 of interest)	2,653.30 (1,653.30 of interest)
SHAPE OF THE GRAPH	
A straight line: linear growth, the same amount added each year.	A curve that gets steeper: exponential growth, the same factor each year.

When interest is paid out

If interest is paid out to you instead of being added to the balance, the balance grows like simple interest. Compounding only happens when the interest stays in and starts earning interest too.

NEXT IN THE SERIES

4. The Rule of 72: How Long Does Money Take to Double?

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