

## Compound Interest

Compound interest is interest that is paid on both the principal and also on any interest from past years. It's often used when someone reinvests any interest they gained back into the original investment. For example, if I got 15% interest on my \$1000 investment, the first year and I reinvested the money back into the original investment, then in the second year, I would get 15% interest on \$1000 **and** the \$150 I reinvested.

Over time, compound interest will make much more money than simple interest.

The formula used to calculate compound interest is:

$$M = P(1 + i)^n$$

$M$  = final amount (including principal)

$P$  = principal amount

$i$  = interest rate per year

$n$  = number of years invested

So, if I were to invest \$1000 at a rate of 5% compound interest per year for 3 years, I would end up with \$1157.62:

$$M = 1000(1 + 0.05)^3 = 1157.62$$

Try these questions on your own:

1. \$1000 invested with compound interest at a rate of 15% per year for 9 years.
2. \$400 invested with compound interest at a rate of 3% per year for 2 years.
3. \$1250 invested with compound interest at a rate of 5% per year for 4 years.

4. \$1400 invested with compound interest at a rate of 9% per year for 6 months.
5. \$300 invested with compound interest at a rate of 25% per year for 8 years.
6. \$600 invested with compound interest at a rate of 4% per year for 10 years.
7. \$750 invested with compounded interest at a rate of 19% per year for 13 years.
8. \$100 invested with compounded interest at a rate of 10% per year for 10 years.
9. \$250 invested with compounded interest at a rate of 4% per year for 4 years.
10. \$4250 invested with compounded interest at a rate of 5% per year for 3 years.

<http://math.about.com>