Course: Personal Finance  
Unit: Developing a Sound Financial Life  
Section: The Road to Financial Security

Tutorial: Compound Interest: How to Grow Your Money

Slide 1

Benjamin Franklin wisely said that “a penny saved is a penny earned.” Most people who are wealthy did not get that way overnight. They took a slower, but a much more likely way, to build their wealth. They saved something of everything they earned.

Slide 2

Benjamin Franklin provides one of the best examples of how a little bit of money saved can grow over time into a lot of money. When Franklin died in 1790, he left in his will 1,000 pounds for two cities important to him, Boston and Philadelphia.

He required that the cities loan the full amount of the money they received to local apprentices who would repay the loan at 5% yearly compound interest rate. The apprentices would then learn a trade, such as printing, and the city would earn interest on the money they’d loaned them.

Slide 3

What is interest?

Interest is the profit made on an investment. In this case the interest was 5%.

What is principal?

The principal is the original amount of money invested or loaned. In this case it was 1,000 pounds.

What is compound interest?

Compound interest is interest paid on the principal and on the accumulated interest already earned.

How much money do you think Philadelphia and Boston made? Let’s find out.

Slide 4

Let’s figure out how much money should be in the account of each city after a 100 years.

\[ A = P (1 + r)^t \]

\[ A = \text{total amount (balance) including interest} \]
\[ P = \text{principal or initial deposit amount (1,000 pounds)} \]
\[ r = \text{annual interest rate (5% compounded yearly)} \]
\[ t = \text{number of years the account has been earning interest (100)} \]

\[ A = 1000 (1 + .05)^{100} \]
\[ A = 131,501.26 \text{ pounds} \]
That means the money increased by over 131 times!!

Unfortunately, it wasn’t always possible to find borrowers to satisfy the terms under Benjamin Franklin’s will. By 1894, the fund in Boston had the equivalent of over 90,000 pounds instead of the over 131,000 pounds that Franklin originally estimated.

**Slide 5**

Based on what Benjamin Franklin determined with compound interest, would you have more money if you were given $1,000,000 in cash or a penny a day that would double every day for one month (30 days)?

**Slide 6**

At the end of 31 days, you would still have $1,000,000 in your bank account. However, if you had chosen to take the penny a day, you would have discovered that the total amount you would have would be $5,368,709. You would have over $5 million! That’s because the money was compounded every day.

**Slide 7**

At the end of 30 days, the total amount you would have would be $5,368,709. You would have over $5 million! That’s over five times more than the $1 million option. This is more money because it was compounded every day.

**Slide 8**

Let’s look at a real world example. Imagine that you start saving $125 a month. Let’s see what your interest would add up to over time. Click on the different interest rates to see how your money grows if you continue to add the $125 a month for 30 years.

How much would you have originally invested over 30 years?

About $50,000.

If the principal was invested at 6% and compounded monthly, how much money would you have in 30 years?

Almost $200,000.

**Slide 9**

Compound interest is paid on the principal and on the interest earned. Your investment is earning interest on interest. The more frequently the interest compounds, the greater your return.

One of the easiest ways to build financial security is to save something of everything you earn and leave it to grow over time. The more time you let it grow, the greater the return.

As a teenager, you have the advantage of a lot of time to grow your money.