

Spreadsheet Investigation

Compound Interest

You can use a spreadsheet to investigate the impact of compound interest.

ACTIVITY

George deposits \$1600 into an account that earns 8% interest compounded semiannually. What is the value of the account after 5 years?

An 8% interest compounded semiannually means that the interest is paid twice a year, or every 6 months. The interest rate is $8\% \div 2$ or 4% per period.

To enter the Lists and Spreadsheet function, press  3.

Use the arrow keys to place the cursor at the top of each column to label them.

- Label column A as p to represent the principal amount invested.

KEYSTROKES:   **P** 

- Label column B as i to represent the interest paid on the account.

KEYSTROKES: **I** 

- Label column C as n to represent the new principal amount.

KEYSTROKES: **N** 

- Label column D as t to represent the time, in years, that the interest is being paid.

KEYSTROKES: **T** 

Step 1 Time



The interest is being added every 6 months, or every 0.5 year. We are interested in the amount in the account after 5 years. Use your arrow keys to place the cursor on cell D1 and enter the intervals of time that the interest is added.

KEYSTROKES: 0.5  1.0  1.5  ... 5.0 

Step 2 Interest

Since the rate of the interest added at each interval is 4%, to compute the amount of interest added each time we multiply the principal by 0.04. Enter this formula into the formula cell for column B.

KEYSTROKES: **=** **P**  0.04 

You will be asked if p refers to a variable or a column. Use the drop down list to select Variable Reference. Then press  .

Step 3 New Principal

To find the new principal add the interest found to the original principal. Enter this formula into the formula cell for column C.

KEYSTROKES: **=** **P**  **I** 

Again you will be asked if p and i refer to a variable or a column. Use the drop down list to select Variable Reference for both variables.

