Lesson/Unit Title	**"Strike It Rich Through Savings"**
Day(s)	6 days
Grade Levels	7-10
Curriculum Areas	Business Math Economics Personal Finance
Website(s)	**http://www.practicalmoneyskills.com/english/index.php** Online financial literacy curriculum lessons, with links to state standards **http://www.rbccentura.com/tools/index.html** RBC Centura (finance institution) tools and calculators
Teacher Resources	**Virtual Economics 3.0 CD--*Theme 3 Lesson 6 Why Save*** **http://ve.ncee.net/** How to order Virtual Economics **http://ecedweb.unomaha.edu/K-12/ve.cfm** Companion lessons for Virtual Economics 3.0! **Financial Fitness for Life: Shaping Up Your Financial Future** Order curriculum from: **http://fffl.ncee.net/**

Unit Overview	This unit focuses upon savings as the key to personal financial growth. By the completion of the unit, students will be able to:
	• Identify/discuss the advantages of saving money, why saving is so important and how savings will provide for future needs and spending.
	• Set short-, medium- and long-term goals
	• Understand the concept of 'pay yourself first'
	• Compare and contrast common savings methods
	• Compute and compare earnings from simple and compound interest.
	• Discuss liquidity as a savings concept
	
	Daily Lesson Overview
	Day 1: Discussion of advantages to saving
	     Where can you save
	      Discuss 'pay your self first'
	     Terms/vocabulary
	Day 2: Short- and long-term goals and how to best accomplish those goals with savings plans.
	Day 3: Saving Options
	     Simple and Compound Interest
	Day 4: Working on goals and time tables. How long will it realistically take to accumulate savings?
	Day 5: Assessment

Nebraska Frameworks Essential Learnings	**BE 8.2 Communication Essential Learning** *Middle Level* Students will understand the principles of oral and written communication. They will demonstrate competency by selecting and using appropriate forms of communication when working individually and in a group. **BE 12.5 Communication Essential Learning** *Secondary Level* Students will understand the principles of oral and written communication. They will demonstrate competency

	by interacting effectively with people in the workplace and in society. **BE 8.3 Computation Essential Learning** *Middle Level* Students will understand basic mathematical and business computations. They will demonstrate competency by performing calculations when engaging in personal financial and business transactions. **BE 12.3 Computation Essential Learning** *Secondary Level* Students will understand mathematical procedures and tools to analyze and solve business problems. They will demonstrate competency by preparing and maintaining financial records and interpreting financial information. **BE 8.5 Economics and Personal Finance Essential Learning** *Middle Level* Students will understand economic and money management concepts that influence personal, business and government decisions. They will demonstrate competency by practicing the role of citizens as consumers, producers, savers and investors in the market system. **BE 12.5 Economics and Personal Finance Essential Learning** *Secondary Level* Students will understand basic economic and financial principles in order to make wise domestic and global economic decisions related to their personal financial affairs, the successful operation of organizations and the economic activities of the country. They will demonstrate competency by applying economic and personal financial reasoning to individual, business and government practices.
Link to Nebraska Standards	**BE 08.2.1 Communication** Students will understand the principles of oral and written communication. They will demonstrate competency by selecting and using appropriate forms of communication when working individually or in groups. **BE 08.3.1 Computation** Students will understand basic mathematical and business computations. They will demonstrate competency by performing calculations when engaging in personal financial and business transactions. **BE 08.5.1 Economics and Personal Finance** Students will understand economic and money management concepts that influence personal, business and government decisions. They will demonstrate competency by practicing the role of citizens as consumers, producers, savers and investors in the market system.

	BE 12.2.1 Communication Students will understand the principles of oral and written communication. They will demonstrate competency by interacting effectively with people in the workplace and in society. **BE 12.3.1 Computation** Students will understand mathematical procedures and tools to analyze and solve business problems. They will demonstrate competency by preparing and maintaining financial records and interpreting financial information. **BE 12.5.1 Economics and Personal Finance** Students will understand basic economic and financial principles in order to make wise domestic and global economic decisions related to their personal financial affairs, the successful operation of organizations and the economic activities of the country. They will demonstrate competency by applying economic and personal financial reasoning to individual, business and government practices.
NBEA Curriculum Standards	**Foundations of Communication** Achievement Standard: Communicate in a clear, courteous, concise, and correct manner on personal and professional levels. **Computation** Achievement Standard: Apply basic mathematical operations to solve problems. **Problem-solving applications** Achievement standard: Use mathematical procedures to analyze and solve business problems. **Economics and Personal Finance** Allocation of Resources Achievement standard: Assess opportunity costs and trade-offs involved in making choices about how to use scarce economic resources. **Saving and Investing** Achievement Standard: Evaluate savings and investment options to meet short- and long- term goals. **Banking** Achievement Standard: Evaluate services provided by financial deposit institutions to transfer funds.
National Economics Standards	**Standard 1**: Scarcity **Standard 2:** Marginal Costs/Marginal Benefits **Standard 4:** Role of Incentives **Standard 12**: Role of Interest Rates
National Personal Finance Standards	**Standard 4:** Saving and Investing

National Math Standards	**8.2 Computation/Estimation** **8.2.2** By the end of eighth grade, students will identify the appropriate operation and do the correct calculations when solving work problems. **8.2.3** By the end of eighth grade, students will solve problems involving whole numbers, integers, and rational numbers (fractions, decimals, ratios, proportions, and percents) with and without the use of technology. **12.2 Computation/Estimation** **12.2.2** By the end of twelfth grade, students will justify solutions to mathematical problems. **12.2.3** By the end of twelfth grade, students will perform estimations and computations of real numbers mentally, with paper and pencil, and with technology.
Teaching Strategies, Procedures and Activities	**Day 1:** Students will be able to explain the advantages to saving, where they can save money, how and why to pay yourself first, and chapter terms. *Bell Ringer:* List one reason why you would save money and list two ways how you could save money. *Class discussion.* *Terms and worksheets* *Closing* **Day 2:** Students will be able to recognize the importance of goal-setting, define short-term, medium-term, and long term goals. Understand how opportunity costs are involved with saving. *Bell Ringer:* Students will write down on 3x5 note card the one thing they want to buy, to be collected by instructor. *Class Discussion and activity:* We will go through the students note cards and decide if they are short-term, medium-term or long-term goals. The students will tape the note cards into categories on the board. I will have the class discussion/lecture. *Closing:* Students will go through the note cards and see if we need to move any of the note cards. If so, why? (Follow criteria learned in the discussion/lecture) **Day 3:** Students will be able to explain savings options and will identify the difference between simple interest and compound interest. Use math to project saving goals. *Bell Ringer:* quick "popcorn" review of terms from <u>Day 1</u>. I will end the bell ringer activity with asking one reason the students would save, and where or how they may choose to save. *Class Discussion:* During the discussion, I will play the video clip from VE3.0 Savings (Part 1 of 2). We will do example problems, and I will hand out activity worksheets. *Activity:* Worksheet on simple interest and worksheet on compound interest.

	Closing: The class will review the difference between simple interest and compound interest and do problem #1 on both worksheets. **Day 4:** Students will recognize the importance of goal-setting, define short-term, medium-term, and long-term goals. Students will use math to project savings goals. *Bell Ringer:* Students will grab (3) 4x6 note cards upon entering the room, the students will write/create one math problem on each card about short- medium- and long- term goals, the student will write the answer to their problem on the back of each card. (We will use these as a challenge/review game before the test) *Class Discussion/assignment:* The students will make one goal for a short-term, medium-term, and long-term goal. Look up how much they will need to obtain that goal (item). Now the students will calculate a plan of saving at the going rate of interest (which they will need to look up), do the math, and write down the plan as to how they will 'make it happen'. *Closing:* I will have students in groups of 2, go to the board and work an interest problem. **Day 5:** Students will assess their understanding of the concepts in this unit. *Bell Ringer:* Review questions on overhead, students will write out answers and turn in. Students will write one 'muddy' question on a 4x6 note card. (I will answer them during the closing) *Closing:* Review concepts students wrote on their note cards. **Day 6:** Students will take the test. *Bell Ringer:* Students will grab their vocabulary note cards and get in groups of 2, and review. Get ready for test *Class time:* Test
Assignments	• Vocabulary • Goal-setting assignments • Computing interest worksheets
Math Applications	Math applications applied in "*Saving for the Future*" worksheets (attached below)

Assessment	**Lesson Unit Evaluation Criteria**	**Points**
	Class discussion/participation/vocab	0-25
	Short- Long-term Goals Worksheet	0-20
	Strike It Rich worksheets: • Interest calculation worksheet 30 • Vocabulary worksheet 20 • Class discussion worksheet 20	0-70
	Unit Test	0-35
	Total Possible Points	**150**

Teacher	Debbie Ehrlich
School	Winnebago Public School

(ANSWERS WILL VARY)

Goals Worksheet: Saving for the Future
Short-term Savings Plan (10 Possible Pts.)

Complete this worksheet, entering your short-term needs on the left and your plan of savings to meet those needs on the right.

Sort-Term needs

List some of your daily needs and their costs (e.g., food)

_____ $ _____
_____ $ _____
_____ $ _____
_____ $ _____
_____ $ _____

List some of your weekly expenses and their cost (e.g., entertainment)

_____ $ _____
_____ $ _____
_____ $ _____
_____ $ _____
_____ $ _____

List some monthly expenses that you expect to have and their cost (e.g., hair-cut permanent)

_____ $ _____
_____ $ _____
_____ $ _____
_____ $ _____
_____ $ _____

List some expenses that you expect to have in the next year or two (e.g., car, prom, vacation)

_____ $ _____
_____ $ _____
_____ $ _____
_____ $ _____

Savings Plans

How much money do you have to meet these daily needs?

_____

Do you have money left over for weekly, monthly, and next year's goals?

_____

How much could you save from your daily, weekly, or monthly income?

_____

Of what you can save, how much will you designate for

   short-term needs: _____
   Long-term goals: _____

Do you think you could save more money than you do now? _____

What percentage of your total income do you save? _____

When you spend more than you should, How do you make up for it? (Withdraw from savings?)

_____
_____
_____
_____
_____

Goals Worksheet: Saving for the Future
Long-Term Goal Plan (10 Possible Points)
Complete this worksheet based on your personal goals and plans to meet those goals

Long term goals

List at least three goals that you expect to achieve by the time you are age 25 (e.g., college education, marriage, trips)

1. _____
   _____
2. _____
   _____
3. _____
   _____

List at least three goals that you expect to achieve by the time you have reached age 40 (e.g., family, home purchase, career)

1. _____
   _____
2. _____
   _____
3. _____
   _____

List at least three goals that you expect to achieve by the time you reach age 65, or achievements that you expect to accomplish by the time you retire.

1. _____
   _____
2. _____
   _____
3. _____
   _____

Savings Plans

How much money do you anticipate saving to meet the goals you hope to accomplish by age 25? _____
_____

What percentage of your total salary do you expect to save to meet these goals?
_____
_____
_____

Do you have other sources of money besides savings to meet these goals? If so, what?
_____
_____
_____

How much money do you expect to have set aside when you reach age 40?

How much money do you expect to have set aside when you reach age 65?

Do you think you will need some retirement plan in addition to social security?

How much income a month do you think you will need for retirement?

Which types of savings plans do you expect to use to meet your long-term goals (e.g., time certificates, bonds)?

In order to be financially secure at retirement, how much money do you believe you need to have in savings or investments? _____

_____

Do you know any persons who are presently retired? _____ If so, how do they meet their financial needs (e.g., savings, social security)? _____

_____

_____

_____

In order to be financially secure at retirement, how much money do you believe you need to have in savings or investments?

_____

_____

Do you know any persons who are presently retired? _____ If so, how do they meet their financial needs (e.g., savings, social security)?

_____

_____

_____

_____

_____

Strike It Rich!

Worksheet on Calculating Interest (30 Possible Points)

Compounding Interest Annually and Semiannually

Directions: Fill in the following charts by calculating interest compounded annually. The principal (beginning balance) is multiplied by the interest rate (decimal format) to get the amount of interest paid. Then the interest is added to the beginning balance to get the ending balance. The ending balance becomes the beginning balance for the next year. Interest rates shown are annual (yearly) rates.

Year	Beginning Balance	8% Interest	Ending Balance		Year	Beginning Balance	7% Interest	Ending Balance
1	$ 1,000.00	$ 80.00	$1,080.00		1	$ 1,000.00	$70.00	$1070.00
2	$1080.00	$86.40	$1166.40		2	$1070.00	$74.90	$1144.90
3	$1,166.40	$93.31	$1259.71		3	$1144.90	$80.14	$1225.04
4	$1259.71	$100.78	$1360.49		4	$1225.04	$85.75	$1310.80
5	$1360.49	$108.84	$1469.33		5	$1310.80	$91.76	$1402.55

Total amount of interest $ _469.33____   Total amount of interest $ __402.55____

Directions: Fill in the following chart by calculating interest compounded semiannually. The principal is multiplied by one-half the interest rate to get the amount of interest paid. Then the amounts of interest are added together, and this total is added to the beginning balance to get the ending balance. The ending balance becomes the beginning balance for the next year. The annual interest rate is 8.25 percent.

Year	Beginning Balance	First-Half Interest		Second-Half Interest		Total Interest	Ending Balance
1	$ 1,000.00	$ 41.25	+	$ 42.95	=	$ 84.20	$ 1,084.20
2	$ 1,084.20	$ 44.72	+	$ 46.57	=	$ 91.29	$ 1,175.49
3	$ 1,175.49	$ 48.49	+	$ 48.49	=	$ 50.49	$ 1,274.47
4	$ 1,274.47	$ 52.57	+	$ 54.74	=	$ 107.31	$ 1,381.78
5	$ 1,381.78	$ 57.00	+	$ 59.35	=	$ 116.35	$ 1,498.13

Directions: Fill in the following chart by calculating interest compounded quarterly. The principal (beginning balance) is multiplied by one-fourth the interest rate to get the amount of interest paid. Then the four quarters of interest are added together, and this total is added to the beginning balance to get the ending balance. The ending balance becomes the beginning balance for the next year. The annual percentage yield is 8 percent.

Year	Beginning balance	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Total Interest	Ending Balance
1	$ 500.00	$ 10.00	$ 10.20	$ 10.40	$ 10.61	$ 41.21	$541.21
2	$ 541.21	$ 10.82	$ 11.04	$ 11.26	$ 11.49	$ 44.61	$585.82
3	$ 585.82	$ 11.72	$ 11.95	$ 12.19	$ 12.43	$ 48.29	$634.11
4	$ 634.11	$ 12.68	$ 12.94	$ 13.19	$ 13.46	$ 52.27	$686.38
5	$ 686.38	$ 13.73	$ 14.00	$ 14.28	$ 14.57	$ 56.58	$742.96

Directions: Fill in the following chart by calculating interest compounded monthly. The principle is added to the monthly deposits to compute interest for the month. Assume that all deposits are made on the first day of each month and are entitled to interest for the entire month. Be sure to use one month's interest rate (divide the total annual percentage yield, APY, by 12). The APY is 6%.

Month	Beginning Balance	Deposit	Total	6% Interest	Ending Balance
1	$ 0.00	$ 50.00	$ 50.00	$ .25	$ 50.25
2	$ 50.25	$ 50.00	$ 100.25	$ .50	$ 100.75
3	$ 100.75	$ 50.00	$ 150.75	$ .75	$ 151.50
4	$ 151.50	$ 50.00	$ 201.50	$ 1.01	$ 202.51
5	$ 202.51	$ 50.00	$ 252.51	$ 1.26	$ 253.77
6	$ 253.77	$ 50.00	$ 303.77	$ 1.52	$ 305.29
7	$ 305.29	$ 50.00	$ 355.29	$ 1.78	$ 357.07
8	$ 357.07	$ 50.00	$ 407.07	$ 2.04	$ 409.11
9	$ 409.11	$ 50.00	$ 459.11	$ 2.30	$ 461.41
10	$ 461.41	$ 50.00	$ 511.41	$ 2.56	$ 513.97
11	$ 513.97	$ 50.00	$ 563.97	$ 2.82	$ 566.79
12	$ 566.79	$ 50.00	$ 616.79	$ 3.08	$ 619.87

Total interest earned during the year? __$ 19.87____

"Savings" Vocabulary

Annual percentage yield (APY)-The actual interest rate the account pays per year, with compounding included. All financial institutions must calculate APY the same way, one can use APY to easily compare the yields on different accounts.

Automatic payroll deduction- having money withheld from your paycheck and sent directly to your savings.

Certificate of deposit (CD)- A deposit that earns a fixed interest rate for a specified length of time.

Compound interest- is interest computed on the original principal plus accumulated interest.

Discretionary income – the amount of money you have left over after you have paid your bills

FDIC- Federal insurance for depositors in commercial banks and savings and loans.

Interest- the amount the financial institution pays to the saver for the use of their money

Liquidity- The ability of an asset to be converted into cash quickly without loss of value.

Maturity date- The date on which an investment becomes due for payment.

Money market account- A combination savings-investment plan in which money deposited is used to purchase safe, liquid securities.

NCUA- provides insurance for depositors' accounts up to $100,000.

Principal- the amount of money deposited by the saver

Securities- stocks and bonds issued by corporations or by the government

Share account- A savings account at a credit union; the shares are ownership interest in the credit union.

Simple Interest- Interest computed on the amount borrowed (or saved) only, without compounding.

Stockbroker- An employee of a brokerage firm, who buys and sells securities for investors.

KEY

Strike It Rich!
Vocabulary worksheet (20 Possible Points)

Fill in the missing word(s) in the space provided.

1. Having money withheld from your paycheck and sent directly to your savings plan is called

    __automatic payroll deduction__.

2. Interest drawn on the sum of the original principal plus interest is called _compound___

    __interest__.

3. Money that is paid for the use of money is called __interest_____.

4. A regular account at a credit union is called a(n) __share_____ __account_____.

5. Investors buy and sell securities through a(n) _stockbroker_____, who works for a

    brokerage firm.

6. Deposits kept in credit unions are insured by the ___NCAU_____.

7. Federal insurance for depositors in commercial banks and savings and loans in provided by

    the ____FDIC_____.

8. Money set aside for a specific length of time at a specified rate is called a(n)

    ___certificate___ _of_ ___deposit_____.

9. The capability of financial resources being readily converted to cash is called

    _liquidity_____.

10. The amount of money you place in savings is called __principal_____.

11. _Discretionary___ ___income___ is what you have left over to spend for what you wish after

    your bills are paid each month.

12. The day on which certificate must be renewed or cashed in is called the ___maturity____

    ____date____.

13. When a CD is cashed before its maturity date, the depositor must pay a(n) __early____

    ___withdrawal___ penalty.

Strike It Rich!
Class Discussion Worksheet (20 Possible Points)

After each of the following questions, circle *T* for a true statement or *F* for a false statement.

1. When you deposit money in a savings account, the financial institution pays you dividends for the use of the money**.**　　　　　　　　　**T**　　**F**

2. Rate of return and annual percentage yield are the same**.**　**T**　　**F**

3. When choosing a financial institution in which to place your savings, you should consider safety, liquidity, convenience, and purpose**.**　　　　**T**　　**F**

4. Deposits in savings and loan associations and commercial banks are insured by the FDIC**.**
　T　　**F**

5. If a depositor withdraws part of all of a certificate of deposit before its maturity date, there will be an early withdrawal penalty**.**　　　　　　**T**　　**F**

6. Financial institutions can offer interest compounded daily because of computers that make rapid computations possible.　　　　　　　**T**　**F**

7. Some ways to make saving easier include direct deposit and automatic deductions. **T**　**F**

On the line at the right of each sentence, print the letter that represents the word or group of words correctly completing the sentence or answering the question.

1) __b_____　Which of the following items is the most liquid?
　　　(a) home　　　(b) regular savings　　　(c) certificate of deposit　　(d) automobile

2) __c_____ A type of savings plan whereby you set aside money at a financial institution for a set period is a
　　　(a) regular account　　　　　　(c) certificate of deposit
　　　(b) share draft account　　　　　(d) money market account

3) __d_____ Which of the following do banks usually offer?
　　　(a) ATM's　　　　　　　　(c) drive-up windows
　　　(b) Numerous locations　　　　(d) all of these

4) __c_____ The FDIC insures a depositor's money up to
　　　(a) $10,000　　(b) $20,000　　　　(c) $100,000　　　　(d) $200,000

5) __b_____ Of the following items, which pays the highest total interest when deposits are withdrawn at irregular times?
　　　(a) Compounded quarterly　　　(c) Compounded yearly
　　　(b) Compounded daily　　　　　(d) Compounded monthly

KEY   Strike It Rich Test 1
Page 1

True/False
Directions: Each of the following statements is either true or false. Indicate your answer by placing T for true and F for false in the space provided.

1) _T____   The chief reason for saving money is to provide for future needs.

2) _F_____   Short-term needs include home ownership, education of children, and retirement.

3) _T ____   Discretionary income is income left to spend after the bills have been paid.

4) _T_____   A regular savings account pays less interest than a certificate of deposit.

5) _T_____   Compound interest is computed on the original principal plus accumulated interest.

6) _T_____   The law requires all financial institutions to tell consumers the annual percentage

   yield on their accounts.

7) _F_____Commercial banks offer only a few banking services and are not very competitive.

8) _T_____Liquidity is a major advantage to regular savings accounts.

9) _F_____A money market fund is insured by the FDIC for a maximum of $ 100,000.

10) _F_____Money market accounts are subject to early withdrawal penalties.

11) _T_____Convenience is a reason why many people choose a financial institution.

12) _T_____Your goals for saving money will affect your choice of a financial institution.

13) _T_____ Almost all commercial banks have insurance with the FDIC.

14) _F_____ Credit unions do not provide insurance for their depositors' savings.

15) _T_____ Early withdrawal penalties are charged against certificates of deposit for

   withdrawals prior to maturity.

16) _T_____ Money compounded quarterly earns more total interest than money compounded

   annually.

Multiple Choice
Directions: Select the best answer to each of the following questions and insert your answer to each question in the space provided.

1. __b_____ Money deposited to earn interest is called
        (a) Investment
        (b) Principal
        (c) Earnings
        (d) Diversification

2. _c_____ You will receive the greatest gain on your principal if interest is compounded
        (a) Quarterly
        (b) Annually
        (c) Daily
        (d) Semiannually

Test 1, Page 2

3. _b_____ A savings account at a credit union is called a
        (a) Certificate of deposit
        (b) Share account
        (c) Money market account
        (d) Savings club

4. _a_____ Money left over after you have paid bills is
        (a) Discretionary income
        (b) Principal
        (c) Interest
        (d) Compound interest

5. _c_____ Which of the following is not a short-term need?
        (a) Unemployment
        (b) Weekend trip
        (c) Child's education
        (d) Automobile repair

6. _a_____ Which of the following is not a long-term need?
        (a) New car
        (b) Home ownership
        (c) Retirement
        (d) Investment plans

7. _b_____ A stockbroker works for which type of financial institution?
        (a) Savings and loan
        (b) Brokerage firm
        (c) Credit union
        (d) Commercial bank

8. _b_____ If liquidity is important to you, which of the following savings options would you not want to consider?
        (a) Savings account
        (b) Certificate of deposit
        (c) Money market account
        (d) All of these are acceptable

9. _c_____ A method to make regular saving easier is
        (a) Savings accounts
        (b) Certificates of deposit
        (c) Automatic payroll deduction
        (d) Money market accounts

10. _b_____ The date on which a certificate of deposit is due is called the
        (a) Redemption date
        (b) Maturity date
        (c) Beginning date
        (d) Ending date

Test 1, Page 3

Matching
Directions: In the space provided, write the letter that represents the word or expression in Column I that matches each item in Column II.

Column I	Column II
a. discretionary income	_____g_____ Setting aside money to meet future needs
b. short-term needs	_____d_____ The amount of money deposited by the saver
c. liquidity	_____i_____ Interest paid on the principal plus interest already earned
d. principal	_____h_____ A rate that includes compounding
e. FDIC	_____j_____ When your employer puts your paycheck into our bank account
f. interest	_____b_____ Emergencies, weekend trips, and social events
g. saving	_____a_____ Income left over after the bills have been paid
h. annual percentage yield	_____c_____ The quality of being easily converted into cash
i. compound interest	_____f_____ Money paid for the use of money
j. direct deposit	_____k_____ The date on which a time certificate must be renewed or canceled and a new on purchased.
k. maturity	_____e_____ Insurance that covers deposits in commercial banks

Short answer
Directions: NEATLY answer the questions in complete sentences in the space provided.

1. What happens to accumulated savings if the deposited amount increases?
   Savings would increase. Saving larger amounts generates greater savings in the future

2. What happens to accumulated savings if the interest rate increases?   It would increase.

3. What happens to the accumulated savings if the number of compounding periods increases?
   Why? It would increase because every time compounding occurs, the saver is earning interest on interest earned.

4. What happens to accumulated savings if the number of years increases? It would increase

5. What is the key to becoming a millionaire?   Save as much as possible for as long as possible earning a high interest rate that is compounded frequently.

Test 1, Page 4

Story Problem
Directions: Answer the questions using the information below.

Uncle Bob has taught you a lot about saving. Now he's encouraging you to open a savings account. He says that it's best to have interest compounded as often as possible. You still aren't too certain what compounded more than once a year means or how it is done. Uncle Bob sends you an e-mail message with the following example.

> Suppose that a bank offers a 5% interest rate, compounded semi-annually. At the end of six months, the bank will multiply your balance by 12 the interest rate and add that amount to you account. So, if you have $180 in the bank after six months, the bank will add $4.50 to your account. Your new balance will be $184.50. At the end of the next six months, if you still have $184.50 in your account, the bank will add $4.61 to your account. Your new balance will be $189.11.

1. What decimal amount would you use to calculate quarterly interest?   **05/4 = .0125**

2. Suppose that the bank pays a 5% interest rate, compounded quarterly. You deposit $360 at the beginning of each grade. Complete the following table to calculate the total savings you'll have at the end of each year. The first two rows are completed for you.

Grade Level	Deposit Plus Previous Balance	First Quarter Interest	Second Quarter Interest	Third Quarter Interest	Fourth Quarter interest	Accumulated Savings
7th grade	$ 360.00	$ 4.50	$ 4.56	$ 4.61	$ 4.67	$ 378.34
8th grade	$ 738.34	$ 9.23	$ 9.34	$ 9.46	$ 9.58	$ 775.95
9th grade	$ 1135.95	$ 14.20	$ 14.38	$ 14.56	$ 14.74	$ 1193.83
10th grade	$ 1553.83	$ 19.72	$ 19.66	$ 19.91	$ 20.16	$ 1632.98
11th grade	$ 1992.98	$ 24.91	$ 25.22	$ 25.54	$ 25.86	$ 2094.51
12th grade	$ 2454.51	$ 30.68	$ 31.06	$ 31.45	$ 31.84	$ 2579.54

3. How many dollars were deposited during the six years? $ 2160.00

4. How much interest was earned? $ 419.54