

Lesson Plan

Text: Financial Algebra

edblazevic@seattleschools.org

Volume: 1

Chapter: Chapter 3_Banking Services

Unit number 3

Title of unit: Savings Accounts

Developed by: Eric D. Blazevic

Date: 6/26/2012

Short Description (Be sure to include where in your unit this lesson takes place):

This lesson is teaching the concept of simple interest. Introduction of the simple interest formula of $I = prt$. I – Interest Earned, p – principal invested, r – is the annual interest rate & t is the number of years.

Also, student will learn how to figure rate need to reach an interest earned goal, time it takes to reach a goal & what interest rate would be needed to reach a goal through the manipulation of the simple interest formula.

- Because these are simple formulas I plan to demonstrate the formula using the examples in the book. (1/2) day
- Classwork: Students to do the applications from the book. One-on-one assessment and reteaching. Worksheet Manipulating the formula (1½ days)
- Time Machine Assignment (1 day)

LESSON PLAN

TEACHER: Teacher Prep/ Lesson Plan

- **Lesson Objectives (Students will be able to:)**
 - ...Learn the basic vocabulary of savings accounts
 - ...be able to compute simple interest using the simple interest formula
- **List of prerequisite skills needed:**
 - ...Knowledge of the Simple Interest Formula
 - ...The skill to change percents to decimals
 - ...The skill to change percents expressed as fractions to decimals
 - ... Use of Calculator
- **Vocabulary:**

Savings Account	Statement Savings
Interest	Minimum Balance
Interest Rate	Money Market Account
Principal	Certificate of Deposit (CD)
Simple Interest	Maturity
Simple Interest formula	

- **State Standards addressed:** (You may use your District's Power Standards if applicable, Highlight "Green" Standards)

Math: (Math)

Extend the properties of exponents to rational exponents

1. Explain how the definition of meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.

Create equations that describe numbers or relationships

4. Rearrange formulas to highlight a quantity of interest, using the same Reasoning as in solving equations.

Reading: (Reading)

Writing: (Writing)

- **Leadership:** FBLA
- **Teacher Preparation:** (*What materials and set-up are required for this lesson?*)
 - ...Student Worksheets (L 3.3 Time Machine)
 - ...Student Worksheet (L3.3 Manipulating the Simple Interest Formula)
 - ...Whiteboard or Giant Post its.
 - ... Calculator
- **Content Delivery:** (*How will the lesson be delivered? List any grouping and instructional strategies as well.*)
 - ...Monday start with lesson in front of class. Demonstrate the concept for ten minutes.
 - ...Work in pairs or small groups through Applications on page 135
 - ...Work one-on-one with individuals. Re visit with class if students are having the same problems
- **Instructional Documents** (*Please attach any Worksheet, Quiz, Reading Guide, etc*)
 - ... Text and attached worksheets
 - ...Vocabulary Quiz – Clicker Jeopardy
 - ...Problem Quiz – Page 41 in student work book.
- **Assessment Tool used in this Lesson** (*scoring method, guide, or rubric*)
 - ... Worksheet answer sheets
 - ... Quiz on vocabulary
 - ... Problem Quiz
- **Reinforcement/Intervention/Extension Activities**
 - ... Go over examples in book with students
 - ... Assign selected applications on page 135-136 to work in class
 - ... One-on-one work with students
 - ... Re-visit based on quiz and worksheet results
- **Career Applications** (*When will this be used in “real life”?*)
 - ...Simple interest is a good tool to measure the value of other potential investment vehicles. In order to compare different options one needs a base line which each can be compared to.
- **Web Pages**
 - ...Monkey Chimp
<http://www.moneychimp.com/features/rule72.htm>
Demonstrates the rule of 72 a fast and quick way to work out how long it takes money to double.

The ‘lectric Law Library

<http://www.lectlaw.com/files/ban02.htm>

discusses and sets the limits on Usury law. Opens the discussion on the concept of Usury

Simple Interest Formula

$$I = prt$$

To review:

I = Interest Earned

p = principal (amount of money you put in)

r = rate of interest you are earning

t = time you are investing in

This is great when you want to know how much you will earn but what.....

You need to earn \$2,500.00 (I) in two years (t) at 3% (r). How do you find out how much Principal (p) you need?

$$\frac{I}{rt} = p$$

Ah, you find a CD that pays 5% (r). You have \$1,700 (p) and you want to know when it will grow to \$2500.00.

$$\frac{I}{rp} = t$$

That doesn't work out so you take the \$1,700.00 (p), so you get the \$2,500.00 but you need it in 5 years (t). You need to find (I) first.

$$\frac{I}{pt} = r$$

Financial education needs to become a part of our national curriculum and scoring systems so that it's not just the rich kids that learn about money.. it's all of us.

David Bach author of "The Armchaire Millionaire"

Name: _____ Period: 3 Class: *Financial Algebra*
 Assignment: 3.3 Quiz Date: 00/00/12 thru 00/00/12

1. Use the simple interest formula to find the missing entries in the following table. Round monetary amounts to the nearest cent, percents to the nearest hundredth of a percent, and time to the nearest month. Use 360 days = 1 year.

Interest	Principal	Balance	Rate	Time
28.42	\$980.00		2.9	1 year
	\$2,900.00		3.05	18 Months
\$400.00	4500.00		4.5	
\$400.00			4.5	4 year
\$400.00	3,000.00			3 year
	750,000.00		5.3	120 days
515.00			2.15	24 months

Answers

Interest	Principal	Balance	Rate	Time
28.42	\$980.00	1008.42	2.9	1 year
152.50	\$2,900.00	3052.25	3.50	18 Months
\$500.00	4500.00	4900.00	4.5	2.47 years
\$400.00	2222.22	2622.22	4.5	4 year
\$475.00	3,000.00	3,475.00	5.28	3 year
13,236.75	750,000.00	763,236.75	5.3	120 days
515.00	11,976.74	12491.74	2.15	24 months

Don't make me show your work!

Financial education needs to become a part of our national curriculum and scoring systems so that it's not just the rich kids that learn about money.. it's all of us.
 David Bach author of "The Armchaire Millionaire"

Name: _____ **Period: 3 Class: Financial Algebra**
Assignment: Ch 3.4 Quiz Economic Time Machine Date: 00/00/12 thru 00/00/12

You have stepped into a time machine. Back you go to the 1976. A time of weak music, bad clothes, simple interest and my high school graduation. Groovey. Your plan is to go back and make as much money as possible, put it in the bank and wait for it to grow. You only have 2 weeks before you have to come back. You are underage so career choices are limited.

You have gotten your first pay check. You have worked 71 hours at your minimum wage job (\$1.57 an hour) at McDonalds. Your pay check total is: **111.47**.

Now what to do with it? Save it of course. This is the 70s banks are paying 5 times the interest on savings accounts that they are today.

First compare banks Rank them highest to lowest:

Institution	Rate	Rank (expressed in like terms)
Republic Savings & Loan	5.2%	
M & I Bank	5 3/8 %	
Homeward Savings	5.225	
Seafirst Bank	5 1/4 %	
Banner Bank	5.025	

Using only the simple calculators, slide rule, mental math or your fingers & toes (this is the 70s) answer the following questions using the simple interest formula:



Using your very best rate and the Simple Interest Formula answer the following questions:

How much will you have after one year

$$111.47 + 5.57 = 117.04$$

If you keep this money in the account for four (4) years how much will you have?

$$111.47 + 22.29 = 133.76$$

If you keep it till today and the bank keeps the interest the same?

$$111.47 + 200.65 = 312.12$$

If you only keep it in the bank for 10 months how much would you have?

$$111.47 + 4.64 = 116.11$$

If you come to my graduation to check out my high school cool you'll have to bring me a present. So you spend \$15.00. (Thank you by-the-way) Unfortunately, you violated the minimum balance requirement (\$100.00) for your bank and they charge you \$5.00. What is your balance?

$$111.47 - 15 = 96.47 - 5.00 = 91.47$$

You've gone back to the present so you can't add to the account and the bank will charge you each year that same \$5.00 fee. What is your balance the next year.

$$91.47 + 4.57 = 96.04$$

Of course they are going to deduct the \$5.00 again. So you have: **91.04**

Financial education needs to become a part of our national curriculum and scoring systems so that it's not just the rich kids that learn about money.. it's all of us.
 David Bach author of "The Armchaire Millionaire"

Name: _____ **Period: 3 Class: Financial Algebra**
Assignment: Ch 3.4 Quiz Economic Time Machine Date: 00/00/12 thru 00/00/12

Fill out table.

Year	Balance	Plus Interest	Less Fee	New balance
1976	96.47	0	5.00	91.47
1977	91.47	4.57	5.00	91.04
1978	91.04	4.55	5.00	90.59
1979	90.59			
1980				
1981				

If your goal was to have a \$1000.00 dollars at the end of 36 years, how much did you need to make? Use the skills learned in the “Manipulating the formula lesson”.

What can you conclude about your (this) plan?

What was going on back in the late 70s (besides Bob Seger & Disco) that would have caused such high interest rates?

What could you do differently (given the constraints) that would have made you more money?

BONUS! And I did appreciate the gift. Thank you again. I used the \$15.00 to buy a \$30.00 U.S. Savings Bond that doubles every 20 years. How much do I have today 36 years later? You may have figure this out in two parts.

Year	Value
1976	15.00
1996	
2012	

Financial education needs to become a part of our national curriculum and scoring systems so that it's not just the rich kids that learn about money.. it's all of us.
 David Bach author of "The Armchaire Millionaire"