

# Calculator Master List

Developed by:

Ruby Ward, Ph.D. Department of Economics  
Anne Whyte, USU Graduate Student, Economics

## General Descriptions of Calculators

<b>Name</b>	<b>Description</b>	<b>Module</b>
How to Be a Millionaire	Determines how much money will need to be saved each month to reach an end goal	1
Inflation	Determines buying power equivalencies from year to year	1
Credit – Can Afford	Determines the maximum price that can be paid for an item, based on a certain monthly payment	3
Credit – Cost of Borrowing	Determines the monthly payment on a credit purchase with a down payment	3
Credit – Pay it Back	Determines the monthly payment on a credit purchase without a down payment (uses credit card as example)	3
Credit – Payment Length	Determines the length of time payments will have to be made to repay a credit purchase, based on a certain monthly payment (uses credit card as example)	3
Savings – End Amount	Determines how much money will be accumulated in an interest-bearing savings account, based on a certain monthly deposit amount	3

## Instructions for Use of Calculators

- Type only in the colored boxes
- Formulas are already figured- answers will be given automatically
- Worksheets are protected so that formulas and text will not be accidentally erased.  
(To unprotect the worksheet, go to tools → protection → unprotect sheet)

\*\* Individual instructions and examples are included on “Explanation” Sheet in each calculator workbook\*\*

## Teaching Calculator Concepts

### **How to Be a Millionaire Calculator:**

- *Basic Concepts:* A bank pays us to put our money in their bank. This is called interest. Interest compounds, which means that every time we get paid interest, that money goes into our account and the total amount in our account increases, so next time we get even more interest paid to us. Saving money is a very good way to “earn” money due to interest.
- *Probing Questions:* If you lent money to your brother, and he paid you back the next day, you wouldn't really mind lending him the money, but what if you lent money to your friend and she didn't pay you back for a month? You would probably want to have her pay you something for borrowing your money for that long. Right? A bank is the same way....  
What amount of money do you think would be fair to have your friend pay you if she borrowed \$25, and didn't pay you back for a month? What about a year?
- *Calculator Uses:* This calculator can be used to determine how much needs to be saved each month to reach a certain monetary goal. It takes into consideration length of savings, interest rate, compounding frequency, beginning balance, and end goal.

### **Inflation Calculator:**

- *Basic Concepts:* Money doesn't always have the same purchasing power every year. Each year, items generally tend to cost more. For example, a hamburger that would have cost \$.25 in 1950 cost \$4.00 fifty years later. That makes it sound nice to be able to live back then, doesn't it? We could buy all kinds of things, right? Not necessarily. Remember that even though things cost fewer dollars back then, people also got paid fewer dollars for working. In the 1960s, minimum wage was \$1.25. A construction job that pays \$20.00 an hour in 2004 would have paid you \$2.00 an hour in 1964. Which one is better? We can't just compare the numbers. We need to look at how many things that amount could buy in each year.
- *Probing Questions:* Have you ever heard your grandparents say, “Back in MY day, a hamburger only cost \$.25”? What types of comments have you heard like that from your parents or grandparents?
- *Calculator Uses:* This calculator can be used to determine the equivalencies of buying power of a monetary amount in any year from 1913-2006.

## **Credit – Can Afford Calculator**

### **Credit – Cost of Borrowing Calculator:**

- *Basic Concepts:* When we buy on credit, we have to pay to borrow the money. This is called interest. When we save, interest can work for us, but when we borrow, interest works against us. Paying interest means that we will end up paying more, sometimes much more, than the actual cost of the item. When buying on credit, we need to make sure that we can afford to pay the interest. This means that sometimes we have to buy less expensive items so that we can pay them off. Another option is using a “down payment,” which means that we can use some of our savings, and then buy the rest on credit. Credit can be a useful tool. In an emergency situation, or a situation where you don’t mind paying extra to have something now, credit can be a good thing.
- *Probing Questions:* Think of something you REALLY want to buy (like a bike or an X-box). You can’t afford to buy this item right now with your savings, but you could in one year. You could buy the item right now on credit, but you’d have to pay \$75 in interest, which means extra money over the cost of the item. Would you wait, or buy it now? Is there any other option for buying the item? (Down Payment).
- *Calculator Uses:*
  - Credit - Can Afford Calculator: This calculator can be used to determine how much you can afford to pay for an item using credit with a down payment, if you can pay a certain amount each month. It takes into account length of borrowing period, interest rate, down payment, and amount per month you can pay. This calculator would be good for use of determining a car or house price you could pay.
  - Credit - Cost of Borrowing Calculator: This calculator can be used to determine how much you will have to pay each month, when you buy a certain amount on credit with a down payment. It takes into consideration interest rate, length of loan, price of item, and down payment.
  - Both Calculators also show the total amount paid and the interest paid. Both of these items are also important.

## **Credit – Pay it Back Calculator**

### **Credit – Payment Length Calculator**

- *Basic Concepts:* Buying on credit can be expensive, because we have to pay to borrow the money. This is called interest. It is very easy to buy things on a credit card, but it is not always very easy to pay it back. Credit cards have very high interest rates, and it is easy to get very far into debt. Credit cards can be a good tool to have in an emergency, or when you don’t mind paying extra to have something now, but we need to be careful with them.

- *Probing Questions:* Think of something you REALLY want to buy (like a bike or an X-box). You can't afford to buy this item right now with your savings, but you could in one year. You could buy the item right now on credit, but you'd have to pay \$75 in interest, which means extra money over the cost of the item. Would you wait or buy it now? If you mow lawns for \$5/hr, you would have to work an extra 15 hours to pay off your credit card. Does that change anybody's mind?
- *Calculator Uses:*
  - Credit – Pay it Back Calculator: This calculator can be used to determine the monthly payment required to pay off a certain monetary amount in a certain length of time. It takes into consideration interest, length of time, and balance owed. This calculator is specifically designed for credit cards, but can be used for any credit purchase that does not require a down payment.
  - Credit – Payment Length Calculator: This calculator can be used to determine the length of time required to pay off a credit purchase, with a certain monthly payment. It takes into consideration interest rate, balance owed, and monthly payment amount. This calculator is specifically designed for credit cards, but can be used for any credit purchase that does not require a down payment.
  - Both Calculators also show the total amount paid and the interest paid. Both of these items are also important.

#### **Savings – End Amount Calculator:**

- *Basic Concepts:* A bank pays us to put our money in their bank. This is called interest. Interest compounds, which means that every time we get paid interest, that money goes into our account and the total amount in our account increases, so next time we get even more interest paid to us. Saving money is a very good way to “earn” money due to interest.
- *Probing Questions:* Have you ever heard your parents say “start saving early!”? Do you think that starting to save your money now, instead of when you are out of college, really makes that much of a difference? What if you can only save \$10 a month right now?
- *Calculator Uses:* This calculator can be used to determine how much money will be left after a certain period of time, given a certain monthly deposit. It takes into consideration length of time, interest rate, compounding frequency, beginning balance, and monthly deposit.