

Eric Gaze  
Director of the QR Program  
Bowdoin College

The Financial Literacy Initiative at Dartmouth College

**MONEY MATTERS**

# Financial Literacy Modules


- ① 10 modules
- ① Earning
  - Pay Stubs and Budgeting
- ① Spending
  - Credit Cards, Cars, and Homes
- ① Investing
  - Savings & Bonds, Stocks, and Mutual Funds
- ① Retiring
  - Planning for retirement

The Center for Mathematics and Quantitative Education - Windows Internet Explorer

http://www.math.dartmouth.edu/~mqed/FinancialLiteracyProject/

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mvradio - Martha's Vineyard... Stock Market News, Business... The Center for Mathemat...


 The Center for  
Mathematics and Quantitative Education at Dartmouth  
*The Electronic Bookshelf / The Little Bookshelf*

## Money Matters

*The Financial Literacy Initiative at Dartmouth College*

A project of Center for Mathematics and Quantitative Education at Dartmouth and the Financial Literacy Center.

The Financial Literacy Initiative at Dartmouth College advocates a quantitative approach to financial literacy for college students, K-12 students, future teachers and adult learners. The initiative supports this approach through contextually rich curriculum modules for classroom use, short video presentations for faculty development or classroom discussion, and case studies. All materials are freely available through online publication. Links to these are found below.

  
Financial  
Literacy  
Center  
A joint center of the RAND  
Corporation, Dartmouth College,  
and the Wharton School

### Modules:

A series of ten quantitative modules allows you and your students or workshop participants to explore the financial aspects of earning, spending, saving and investing. Each module includes an online slide presentation including videos and useful links. The presentation is supported by a set of online instructor notes suggesting activities, exercises, discussion questions and directions for further study or research. Also available online are spreadsheets and worksheets for students (and instructors) to use. Each module also has an associated case study and assessment tool, available upon request from Audrey Brown.

Modules may be used flexibly in conjunction with a variety of courses. They may be used independently to support an entire course, with student activities supporting about four classroom hours of work plus independent assignments. Alternatively they may be included as part of a course emphasizing developmental mathematics, quantitative literacy, college algebra, or financial literacy.

[Go To Modules](#)

### Basic Mathematics through Financial Literacy:

This text is intended to be the basis for an alternative basic mathematics course based on real financial decisions everyone will have to make. A large proportion of entering college students are required to take and pass such a course as prerequisite to college level subjects. Largely a review of elementary and high school mathematics, this course is known to have limited success as a conduit to college. Financial literacy provides an entry point to the same material that benefits from its relevance to daily life.

### Video presentations for faculty development and classroom discussion:

Seven videos support faculty development and discussion. Four short videos support presentations and discussions about how financial literacy topics fit naturally into a quantitative reasoning course. Three more short case studies provide an opportunity to look at specific financial scenarios.

Internet 100%

## Modules

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### Earning:

**How much will I take home?** Based on the first pay stub a new teacher will receive, this module leads the student to understand all of the withheld pay, what it is for, and why it is withheld. In particular, it looks at voluntary contributions to 401K plans and asks students to consider the present and future implications of making small contributions early in the career.

**Paddle Your Canoe** Based on the typical household budget for a recent college graduate, this module helps students see where the money goes and how to control it. A very basic spreadsheet introduces students to the use of this tool.

### Spending:

**Understanding Credit Card Offers** Based on a typical department store offer of 10% off the price of your purchase for opening a credit card, this module poses the question: Is it a good deal? Students will use online calculators and spreadsheets to explore the workings of interest, various payment strategies, and competing card offers.

**Jetta or Jaguar? Buying your ideal car** In this module students will compare car purchases, including estimating and budgeting for all related expenses (insurance, repairs, gas), depreciation, and various loan options. A spreadsheet reveals the relationship of principal remaining on a car loan to depreciation, and the "upside down" loan.

**Buy, Rent, or Live in a Tent?** In this module we explore the process and finances of home purchase, so that students understand the expectations of mortgage lenders as well as the impact of owning house on their own budgets.

### Saving and Investing:

**Investing in Savings and Bonds** This module explores how money grows over time in a savings account, and extends the discussion to savings bonds and treasury bills, which are also conservative mechanisms for growing wealth.

**Investing in the Stock Market** Buying and selling stocks online is as simple as ordering from an online store. So it is imperative that students understand the stock market—what it is, how it works, the risks and advantages of using it. This module serves as an introduction to buying and selling stock directly using online services.

**Investing in Mutual Funds** Mutual funds are an alternative to investing directly in stocks or bonds, allowing the consumer to purchase shares of a fund representing a variety of separate investments. This module explains how these work, how fees and other charges vary among them and why you might want to use them.

### Planning for Retirement NOW:

**Your Parents Will Move In With You!** How much money does a couple need to retire? This module leads the students through a set of calculations that mimic those done by financial advisors in search of an answer for their clients.

**Saving For Retirement** This module asks and answers a simple question. If you want to have a certain amount of money in a certain number of years, how much do you have to invest every year? And how does it depend on the rate of return of your investments? This module allows students to discover the benefits of starting early.

# Budgeting Module

- ⦿ Essentially Power-point presentation
- ⦿ Students work through at own pace
- ⦿ Short video clips
- ⦿ Links to online information
- ⦿ Short assignments



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### Paddle Your Own Canoe Constructing a Household Budget

According to a US Department of Labor survey, the American household spent an average of \$6,372 on food and \$16,895 on housing in 2009. These represented 12.99% and 34.43% of household income respectively. How likely is the average person to be aware of their personal spending? A 2007 survey of 1003 Americans reported that only 40% had a household budget, and more than 20% keep no track at all of where their money goes.

This is a case where knowledge certainly is power. The Federal Trade Commission recommends developing a budget as "the first step toward taking control of your financial situation". In this module, students will do just that as they become acquainted with typical household expenses and the options life offers for compromise.

We suggest that instructors open the instructor notes for this module, save them as a PDF file, and print them for reference.

This module also includes assessment tools (pre and post test) and a case study for deeper investigation of this topic. These resources are available by contacting Audrey Brown.

- [How to use this module](#)
- [Outline of module](#)

[Start Module](#)**Contributors:**

Dorothy Wallace, Dartmouth College, Kim Rheinlander, Dartmouth College, Caren Diefenderfer, Hollins University

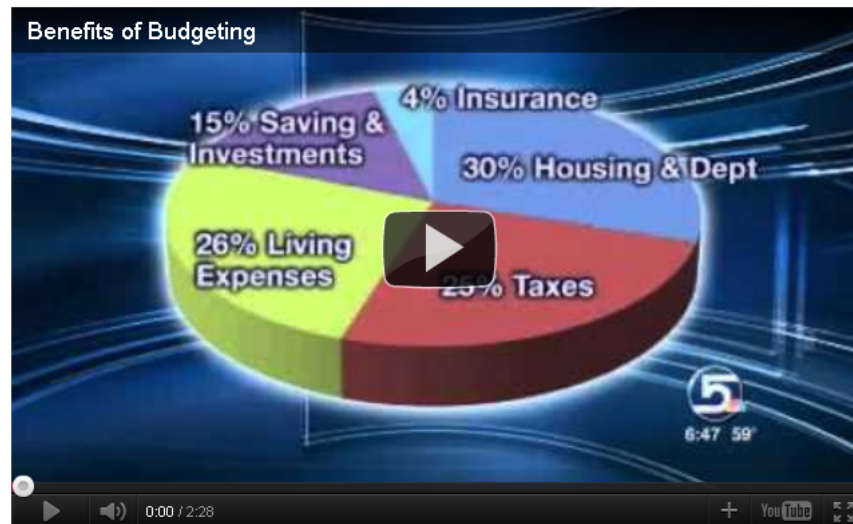
MQED is part of The National Numeracy Network and is partially funded by The National Science Foundation, The Woodrow Wilson National Fellowship Foundation, The Social Security Administration, and Dartmouth College.

# Planning Household Budgets-1

Close

Next

Why budget?



You-tube videos are  
informative and fun.

# Module Resources

- Teaching Notes
- Worksheets
- Spreadsheets
- Case Studies
- Pre-Post Tests



## Planning Household Budgets-3

[Previous](#)[Next](#)

Thomas is a teacher at the Railway School, making a salary of \$41,000. His payroll deductions include taxes, social security, union dues, and contributions for group life and health insurance through his employer. Based on his take-home pay, he conservatively estimates he can afford monthly expenses of \$2,055.

Hyperlinks for associated  
teacher notes and  
spreadsheets.

(Here are some notes to the instructor [PHBNI-3]).

## Notes to the instructor Paddle Your Canoe: Planning Household budgets

Print

Close

### PHBNI-1

Have students track their expenses for a week prior to starting this module. Several discussions and activities will refer to this data.

Prior to starting this module, it might also be productive to have the class play a free online budgeting game, *Groove Nation*, developed by the D2D Fund. *Groove Nation* focuses on the key aspects of budgeting, including the importance of planning for unexpected expenses and paying off debt. Students' experiences with playing the game could provide a basis for an initial classroom discussion.

Have the students watch the video followed by a discussion about budgeting.

Discussion questions

What do you think this family's budget is going to look like?

What are students' personal experiences with budgets?

What is their sense of a need for a budget?

### PHBNI-2

Students should be asked to sort their expenses into the same categories as the U.S. Department of Labor has done on this slide and compare their personal situation to the U.S. average.

### PHBNI-3

At this point students should be invited to begin creating their own budget based either

budgetmodule [Read-Only] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Developer

Normal Page Layout Page Break Preview Custom Views Full Screen

Workbook Views Show/Hide

Zoom 100% Zoom to Selection

New Window Arrange All Freeze Panes Split Hide View Side by Side Synchronous Scrolling Reset Window Position Save Workspace Switch Windows Macros

B20 =SUM(B6:B19)

	A	B	C	D	E
2					
3					
4	Expense	single apt	shared apt		
5					
6	rent	900	700		
7	renter's ins	15.42	12.5		
8	electricity	20	15		
9	student loans	200			
10	medical	15			
11	transportation	50			
12	cell phone	120	70		
13	groceries/supplies	320	320		
14	dining out	240	240		
15	entertainment	60	60		
16	music lessons	200	200		
17	travel	25	25		
18	misc.	200	200		
19		0	0		
20	total	2365.42	2107.5		
21					
22	budget	2055	2055		
23	difference	-310.42	-52.5		

Simple spreadsheets to get started.

Sheet1

Ready Page: 1 of 1

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## Credit Card Offers - 8

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For each of the three scenarios, calculate what happens over the course of 4 months.

Each month you will need to subtract the monthly payment, then calculate the interest on the previous balance to get a new balance you will carry forward to the next month.

Here is a helpful [worksheet](#) that you can use to track your calculations.

Hyperlinks for vocabulary,  
worksheets, and  
spreadsheets.

(Here are some notes to the instructor [\[ccni8\]](#) about this activity.)

**Balance:** The amount of money in an account at a given time. This may be positive or negative. An outstanding balance is the amount you owe.

**Bonds:** A debt investment in which an investor loans money to an entity (corporate or governmental) that borrows the funds for a defined period of time at a fixed interest rate.

**Certificate of Deposit:** A savings certificate entitling the bearer to receive interest. A CD bears a maturity date, a specified fixed interest rate and can be issued in any denomination. CDs are generally issued by commercial banks and are insured by the FDIC. The term of a CD generally ranges from one month to five years.

**Compounding:** The addition of interest to the principal. From the point that this interest is added, it earns interest along with the principal.

**Corporate Bonds:** A debt security issued by a corporation and sold to investors.

**Coupon Rate , yield:** The interest rate stated on a bond when it's issued. The coupon is typically paid semiannually. This is also referred to as the "coupon rate" or "coupon percent rate".

**Deduction:** Something that is, or may be subtracted. (as in items from taxable income)

**Deferred Load:** A sales charge or fee that is assessed when an investor sells certain classes of fund shares before a specified date

BACK



## Worksheet: Calculating what happens to a credit card balance

Fill in the table below by calculating the interest, new balance and total payment for each month for the two payment scenarios, \$25.00 per month and \$50.00 per month. Follow what happens to the balance for the scenarios and answer the questions below.

Note: If you pay off the balance in full when you get the first statement there will be no interest and the carry over balance will be zero.

Month	Balance	Interest	Payment	New Balance	Total of all Payments made until this time

Month	Balance	Interest	Payment	New Balance	Total of all Payments made until this time
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# Case studies and assessment tools available upon request.

**CaseStudyCreditA.pdf - Adobe Reader**

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 **Money Matters Case Study: Understanding Credit Cards Scenario A** 

Financial Literacy Center  
A joint sponsor of the Money Matters Curriculum, the Money Matters Curriculum for Teachers, and the Money Matters Curriculum for Students

Tom is 2 years out of college making \$42,000 per year. He has some debt—\$20,000 in college loans, a \$15,000 car loan and credit card debt totaling about \$10,000, with interest at 17% APR. He is becoming worried about his debt level and wants to consolidate his credit card debt and take out a lower interest loan to pay it off.

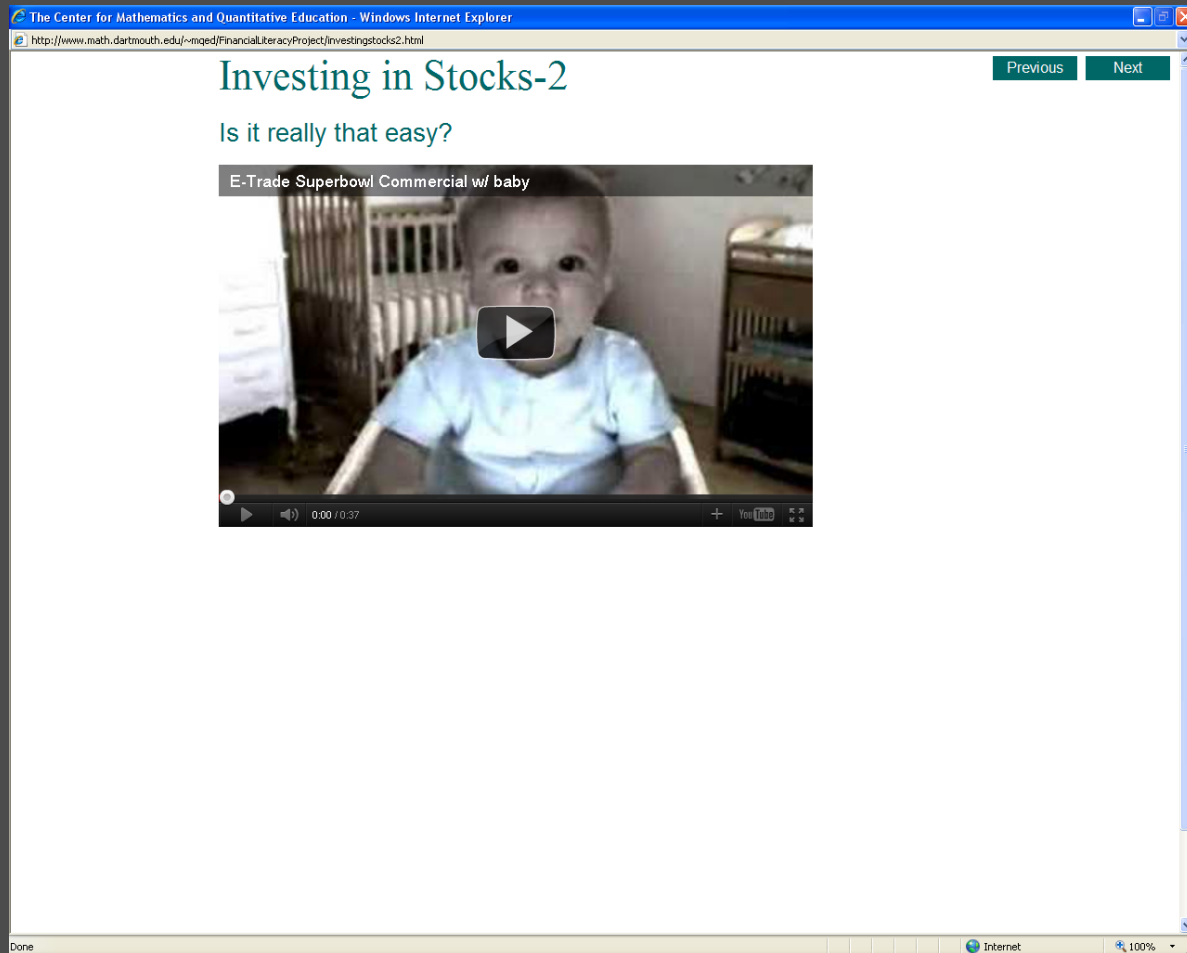
The credit card debt has been accumulating slowly even though Tom has held the same job for two years. He acquired all of his car and credit card debt since graduation. When he finished college Tom also had credit card debt of comparable size, but his parents generously paid it off, considering it part of his college expenses. His parents, however, are not particularly well off and Tom does not wish to approach them a second time for help.

Tom's girlfriend Sally has some money in the bank and he is considering asking her for a loan. Sally does not know about Tom's previous credit card balance, which his parents paid, and he has no intention of telling her about it.

Your analysis should include:

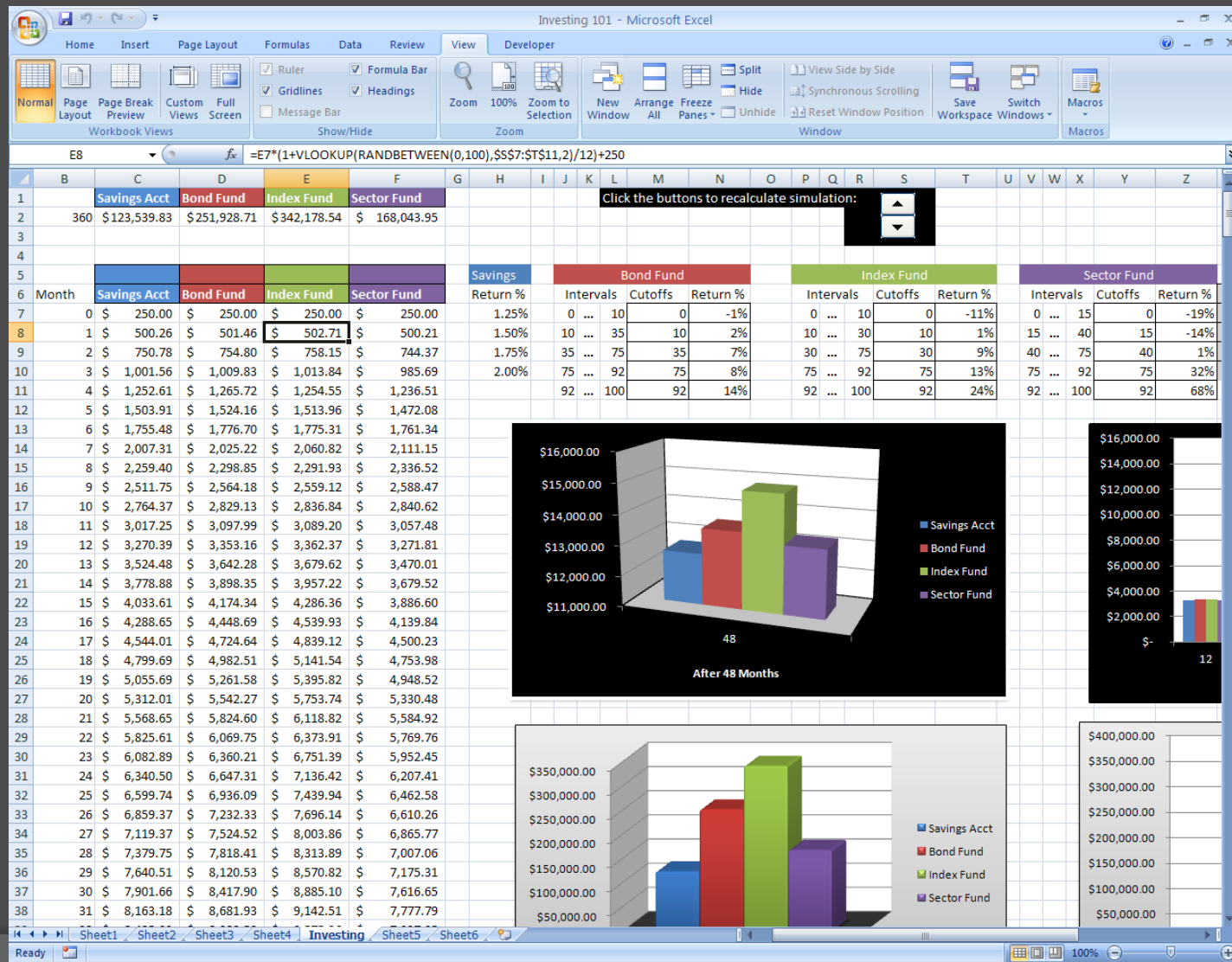
1. What options does Tom have to improve his financial situation? (This is a research question that you can explore using the internet)
2. If Tom were to ask Sally for a loan, what would be a fair rate of interest to offer?
3. What will each of these options cost him on a monthly basis? In the long run total? (The spreadsheet included with the credit card module will help with this question.)

# Investing Modules





# Advanced Spreadsheets



# QR Course

- Embed these modules into existing course
- Spreadsheets great QR tool
- Financial and Statistical Applications
- QR Assessment tool available
- [egaze@bowdoin.edu](mailto:egaze@bowdoin.edu)
- National Numeracy Network (NNN)  
October 2012 Conference in NYC
  - QL at Work: Navigating the Worlds of Journalism, Finance, Business and Citizenship

Thank You!  
Questions?

Questions?

**Thank You!**