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Teacher Introduction

In the Personal Finance Simulation, students make financial decisions such as buying a house, buying a car, and handling unexpected expenses. The simulation covers eighteen "months" worth of a budget. Each student starts with $40,000 in a checking account and has a monthly (per quiz) income of $4,800. They tithe from their income at 10 percent and pay tax at 20 percent. The first assignment informs them that over the next few months, they will make several decisions:

- Buy a new or used car with cash or a loan
- Buy a house or continue renting
- Buy insurance as needed
- Start a business, go to college, or remain employed
- Invest in a high-yield savings account

Each quiz day, students will be given a month's expenses and income. They will enter this in a chart of income and expenses. Most expenses will be fixed, but one budget buster will be drawn at random each month. You may also want to give bonuses for high grades or for an hour of community service. After completing the simulation, students will complete a personal financial statement and answer several questions to help them evaluate their decisions.

The personal finance project helps prepare students for real-life financial decisions by focusing on these objectives:

- Help students think through the trade-offs between owning and renting, paying cash versus borrowing for a vehicle, and investing in business or education versus reducing debt.
- Introduce students to the realities of regular expenses and the difficult process of loan amortization.
- Introduce students to the reality of unexpected expenses.
- Let students experience the consequences of financial decisions in a controlled environment.

This project is an oversimplification of real life, yet it probably is going to be difficult for the students, especially in the first months. As the teacher, you should work through at least the first six months before you start your students on the project. After each month's work, check over the students' work.

Student Introduction and Instructions

Asher Rawlins is a 22-year-old single man. After graduating from high school, he worked for two years at a local feed mill, then spent two years in volunteer service. He has returned home, and he now needs to make a variety of financial decisions. He resumed his old job, which pays $4,800 a month, and he needs to decide what to do with his $40,000 savings account. Should he continue renting a car from his parents or buy one of his own? Should he continue boarding with his parents or buy his own home? Should he keep his job and focus on savings, go to college, or start his own business?

Month 1 is an orientation month. After that you will begin making decisions. Month 2 you may buy a car, Month 3 you may buy a house, and Month 4 you may begin making business or college decisions. Look ahead now to map out a strategy. You may want to ask for advice from your parents. The goal of this project is to maximize personal net worth. Of course, maximizing personal net worth is not a worthy goal for life, but this project will give some insight into the long-term financial implications of certain decisions. At the end of the simulation, you will complete a personal financial statement to see how you did.

Instructions

Orientation: Month 1

1. Enter gross income of $4,800 (Line A) in the Monthly Tracker. Calculate tax (Line B) and tithe (Line C) based on gross income.
2. Calculate net income (Line D) by subtracting tax (Line B) and tithe (Line C) from gross income (Line A). (A – B – C = D).
3. The budget buster is determined for you this month as if you rolled 1-2. Find 1-2 on the Budget Busters on page 12 and enter the extra income on Line E.
4. Enter $500 on Line G for regular expenses to cover phone, food, clothing, fuel, and other miscellaneous costs.
5. Enter a vehicle rental fee of $500 on Line H. You will soon decide whether to buy a car or to keep renting.
6. Enter a housing rent payment of $700 on Line K. You will soon decide whether to buy a house or to keep renting.
7. Read through the upcoming options to begin planning a strategy to increase income and provide housing (by renting or buying), transportation (by renting or buying), insurance for your house and vehicles, and investments in a savings account. You may want to discuss with your parents which options they think are best. Make sure you have enough money in your checking account to cover the closing costs and the down payment. Note that you will need to save for a bit if you want to make a significant down payment on a house.
8. Calculate total expenses by adding Lines G, H, and K. Put the answer on Line Q.
9. Copy the number in Month 1, Line F (Total Income) to Month 1, Line V (Total of Cash Deposits).

10. Copy the number in Month 1, Line Q (Total Expenses) to Month 1, Line W (Total of Cash Withdrawals).
11. Calculate the ending bank balance (Line X) by adding the beginning checking account balance (Line U) and total of cash deposits (Line V) and subtracting total of cash withdrawals (Line W) (U + V – W = X). Use parentheses to indicate a negative balance.

Copy the number in Month 1, Line Z to **Month 2, Line U.**

Instructions for completing Months 2–18:

1. Enter gross income from the Income Calculator page. Calculate tax and tithe based on gross income. **Note: Everyone makes $4,800 in Months 2 and 3.**
2. Subtract tax and tithe from gross income to calculate net income.
3. Determine a budget buster from the Budget Busters page. (If it is income, enter it on Line E. If it is an expense, enter it on Line P).
4. Enter $500 on Line G for regular expenses to cover phone, food, clothing, fuel, and other miscellaneous costs.
5. Follow the instructions on the Transportation pages. If you previously bought a car and have loan payments, update the vehicle loan amortization schedule and enter the vehicle expenses on the Monthly Tracker.
6. Follow the instructions on the Housing pages (any time after Month 2). If you previously bought a house, update the mortgage amortization schedule and enter the housing expenses on the Monthly Tracker.
7. If you wish, you may attempt to increase your gross income on or after Month 4 by using the Income Calculator page.
8. If you wish, you may open a high-yield savings account on or after Month 4. Follow the instructions on the Savings Account pages.
9. Calculate total expenses (Line P) by adding up all expenses listed on Lines G through O.
10. Calculate total cash deposits (Line V) by adding total income (Line F), and transfer from savings (Line T) (F + T = V).
11. Calculate total of cash withdrawals (Line W) by adding total expenses (Line Q), business expenses (Line Q), college expenses (Line R) and transfer to savings (Line S) (Q + R + S = W).
12. Calculate the ending bank balance (Line X) by adding the beginning checking account balance (Line U) and total of cash deposits (Line V) and subtracting total of cash withdrawals (Line W) (U + V – W = X). Use parentheses to indicate a negative balance.
13. If your ending balance is negative on Line X, multiply Line X by 2% for a credit card interest charge, and enter the amount on Line Y. Add the credit card interest charge (Line Y) to the ending bank balance (Line X) to determine final balance (Line Z). You may not make business investments or go to college (as described on the Income Calculator page) when you have credit card debt. Use parentheses to indicate a negative balance.
14. Transfer the final balance (Line Z) to beginning checking account (Line U) of next month.

Transportation

1. You have six options for providing transportation.
   - Option 1: Rent for $500 a month for the entire project or until you are ready to buy. **After you buy a car, you may not return to renting. If you buy a car, skip all future car rent payments.**
   - Option 2: Buy a new car for $25,000 cash. Skip all gray budget busters (vehicle repairs).
     - first month – $25,000
     - following months – $0
   - Option 3: Buy a nice used car for $13,000 cash.
     - first month – $13,000
     - following months – $0
   - Option 4: Buy an old car for $5,000 cash.
     - first month – $5,000
     - following months – Maintenance of $100 (Write this in Line I for the rest of the project.)
   - Option 5: Make a $5,000 down payment on a new car and make payments of $390 for five years. The beginning balance of your loan is $20,000. Skip all gray budget busters. Annual interest is 6%.
     - first month – $5,390
     - following months – payment of $390
   - Option 6: Make a $3,000 down payment on a nice used car and make payments of $305 for three years. The beginning balance of your loan is $10,000. Annual interest is 6%.
     - first month – $3,305
     - following months – payment of $305

Choose the level of vehicle insurance you want. If you buy a car, you must also buy insurance every month for the rest of the project, including the month you purchase the vehicle. Add this to Line J for the rest of the project.

Every owner needs liability insurance. It will be a flat fee of $100 monthly.

You may also purchase full coverage insurance (and you must purchase full coverage if you borrowed money) for your car. This should be combined with the liability insurance into one monthly fee. Having full coverage insurance allows you to skip the 2-1 and 2-4 budget busters.

- $250 extra insurance charge monthly for the $25,000 car
- $175 extra insurance charge monthly for the $13,000 car
- $100 extra insurance charge monthly for the $5,000 car

If you choose to borrow money for a vehicle purchase, you must track the loan amortization monthly. Do not use this chart if you paid for the vehicle up front.

1. Enter the new balance from the previous month as the beginning balance for this month. For the first month, use the beginning balance of the car you used.
2. Multiply the beginning balance times the annual interest rate. Divide this by 12 to calculate monthly interest and write it in the interest column.
3. Add the interest and beginning balance.
4. Decide if you will make the minimum payment or a greater amount.
5. Subtract the payment you chose from the interest and beginning balance total for the new balance.

Month	*Beginning balance*	*Interest*	*Interest + beginning balance*	*Payment*	*New balance*
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Housing

1. You have five options for providing housing.
   - Option 1: Rent for $700 a month for the entire project or until you are ready to buy a house. **After you buy a house, you may not return to renting. If you buy a house, skip all future rental payments.**
   - Option 2: Buy a $250,000 home with a 20-year loan, make a 10% down payment, and pay 5% interest. The beginning balance of your loan is $225,000. You will need to maintain an amortization schedule using the table on page 8.
     - first month
       - down payment of $25,000
       - closing costs of $3,500
       - enter the property tax of $100 on Line M of the Monthly Tracker for the rest of the simulation.
     - following months
       - mortgage payment of $1,485
   - Option 3: Buy a $250,000 home with a 20-year loan, make a 20% down payment, and pay 4.5% interest. The beginning balance of your loan is $200,000. You will need to maintain an amortization schedule using the table on page 8.
     - first month
       - down payment of $50,000
       - closing costs of $3,500
       - property tax of $100
     - following months
       - mortgage payment of $1,265
       - property tax of $100
   - Option 4: Buy a $350,000 home with a 30-year loan, make a 10% down payment, and pay 5.25% interest. The beginning balance of your loan is $315,000. You will need to maintain an amortization schedule using the table on page 8.
     - first month
       - down payment of $31,500
       - closing costs of $8,500
       - property tax of $140
     - following months
       - mortgage payment of $1,739
       - property tax of $140

- Option 5: Buy a $350,000 home with a 30-year loan, make a 15% down payment, and pay 5.25% interest. The beginning balance of your loan is $297,500. You will need to maintain an amortization schedule using the table on the next page.
  - first month
    - down payment and first mortgage payment of $52,500.
    - closing costs of $8,500.
    - property tax of $140
  - following months
    - mortgage payment of $1,643
    - property tax of $140

You will need to buy homeowners' insurance if you have a mortgage. Enter this on Line N for the entire project.

- Add $110 per month for the $250,000 house.
- Add $154 per month for the $350,000 house.

Housing

If you choose to buy a house, you must track the loan amortization monthly.

2. Enter the new balance from the previous month as the beginning balance for this month. For the first month, use the beginning balance of the loan you chose.
3. Multiply the beginning balance by the annual interest rate. Divide this by 12 to calculate monthly interest and write it in the interest column.
4. Add the interest and beginning balance.
5. Decide if you will make the minimum payment or a greater amount.
6. Subtract the payment you chose from the interest and beginning balance total for the new balance.

Month	*Beginning balance*	*Interest*	*Interest + beginning balance*	*Payment*	*New balance*
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Income Calculator

You can increase your wage by going to college or starting a business. Going to college only affects your wage, while starting a business may affect your wage and add value to your business. Everyone has a $4,800 income in Months 1-3.

1. Enter the month number you are attempting to increase your wage.
2. Enter your college or business expense. You may only make one investment or college decision per month. Each investment is a one-time expense.
3. Roll a die. Use one of the lists below to determine your pay increase.
   a. Go to college. Spend $4,000.
      - Roll a 1 or 2, no increase. The college degree did not yield extra income.
      - Roll a 3 or 4, 10% increase.
      - Roll a 5, 15% increase.
   b. Start a business. Spend $5,000. Roll a die to determine your pay increase.
      - Roll a 1 or 2, no increase in income. This a failed business. You can try again the next month.
      - Roll a 3 or 4, 10% increase.
      - Roll a 5, 25% increase.
      - Roll a 6, 40% increase.

Income Calculator

4. If your income increased, write the rate of pay increase in the column, add it to 100%, convert the number to a decimal, and multiply by your beginning wage. This is your new wage for the rest of the simulation.

Month	*Beginning wage*	*College expense*	*Business expense*	*Rate of pay increase*	*Next month's wage*
1	4,800				
2	4,800				
3	4,800				
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

Savings Account

You may deposit as much money as you want each month. Deposits earn an APR of 5% with interest compounded monthly. If you choose to open a high-yield savings account, you will need to update the balance monthly until you withdraw all your money. The first deposit you make is entered as an additional deposit.

1. Enter the new balance from the previous month as the beginning balance for this month.
2. Multiply the beginning balance by the annual interest rate of 5%. Divide this by 12 to calculate monthly interest and write it in the interest column.
3. Decide if you will make an additional deposit. Write the amount on Line S of the Monthly Tracker and in the additional deposits column here.
4. If you are making a withdrawal, write the amount in the withdrawals column.
5. Multiply the withdrawal by 0.9. Write this in Line T of the Monthly Tracker. (Note: This calculates the net proceeds after the withdrawal penalty is subtracted.)
6. Add the beginning balance, interest, and additional deposits, and subtract any withdrawals to find the new balance.

Month	*Beginning balance*	*Interest*	*Additional deposits*	*Withdrawals*	*Net proceeds to checking*	*New balance*
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						