

Lesson Description

This lesson builds on Grade 7, Lesson 1. Students will calculate net income and categorize expenses to create a budget. Percentages for each category will be calculated and analyzed.

For the second part, students will analyze a budget and identify variable and fixed expenses. They will then use this understanding to balance a budget. Students will make spending decisions to ensure that the expenses do not exceed the income.

Finally, students will use Texas Reality Check to develop their anticipated future budget. Based on their decisions, they will be given a budget and a target salary that will provide for this lifestyle they have chosen. They will then explore occupations that will provide the target salary.

Texas Essential Knowledge and Skills (Target standards)

- **PFL Math 7.13B** identify the components of a personal budget, including income, planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses and calculate what percentage each category comprises of the total budget

Texas Essential Knowledge and Skills (Prerequisite standards)

- **Math 7.1:** Mathematical Process Standards
- **Math 7.3A:** add, subtract, multiply, and divide rational numbers fluently
- **Math 7.3B:** apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers
- **Math 7.4D:** solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems

National Standards (Supporting standards)

- **CEE Buying Goods and Services 8.5:** A budget includes fixed and variable expenses, as well as income, saving, and taxes.
- **CEE Buying Goods and Services 8.6:** People may revise their budget based on unplanned expenses and changes in income.

CEE - Council for Economic Education

CCSS - Common Core State Standards

- **CCSS Math:** Standards for Mathematical Practices
- **CCSS Math 7.RP:** Use proportional relationships to solve percent problems
- **CCSS Math 7.NS:** Apply properties of operations as strategies to multiply and divide rational numbers
- **CCSS Math 7.NS:** Solve real-world and mathematical problems involving the four operations with rational numbers

PFL Terms

- Budget
- Gross pay
- Net income
- Fixed expenses
- Variable expenses

Time Required

Two 45-minute class periods

Materials Required

- A copy of **Activity 7.2-1** for each student
- A copy of **Activity 7.2-2** for each student
- A copy of **Activity 7.2-3** for each student
- 1 sheet of chart paper per group
- 2-3 markers per group
- A computer with access to the Internet for each student

Procedure**Engage**

1. Write the following words on the board: income and expenses. Ask what is income? (**Money received for doing a job or profit earned from a business.**) What are expenses? (**Money that you have to pay out.**)
2. Add the word “budget” to the board. Ask students to write a sentence using the three terms. After 1 minute, have them share their sentence with a neighbor. Direct each student to adjust his/her sentence if needed and then share the adjusted sentence with a different partner. Students should adjust the sentence again if needed. Next, have a few students share their final version their sentences. Write these on the board. (**Sample sentences: A budget is a plan to manage income and expenses. Stacie budgets so that expenses do not exceed income.**) Point out that the word “budget” can be a noun such as in the first sentence. In this case, it is a plan that shows how the income will be distributed. In the second sentence, it is used as a verb to describe what will be done with the income and expenses.

Explore

3. Distribute **Activity 7.2-1** to each student. Group students with two or three other students. Explain that a budget is a tool that helps people manage their money and plan for the future. Today they will help Barney create a monthly budget. Barney has been working full-time for 3 months. He knows the importance of keeping financial records. Therefore he decides to begin by creating a monthly budget.
4. Direct students’ attention to part 1. Ask them to calculate Barney’s net monthly income by following the steps on part 1. Then, go over the process by asking the questions below.
 - a. Calculate Barney’s total deductions by adding the federal taxes and his medical premium. Enter this number in the last column for Total Deductions on his paycheck stub. (**$\$289.90 + \$119.66 + \$27.99 + \$100.00 = \$537.55$**)
 - b. Subtract Barney’s Total Deductions from his Gross Pay. Enter this number in the last column for Net Pay on his paycheck stub. (**$\$1930.00 - \$537.55 = \$1392.45$**)
 - c. Barney receives a semi-monthly paycheck. What does this mean? (**He gets paid twice a month.**)
 - d. How much money will Barney bring home monthly? (**$\$2784.90$**) Explain that a budget can be calculated by the day, week, month, or year. Since Barney is creating a monthly budget, students need to consider how much income Barney earns every month and how much he spends every month.

5. The remainder of the activity is self-guided. Have students follow the steps on **Activity 7.2-1**. The teacher should monitor groups. A key has been provided.

Explain

6. Once students have completed this activity, use the questions on the worksheet to lead a class discussion.
 - a. Does Barney spend more than he makes? Explain. No. Barney's monthly net income is \$2784.90 and his expenses are also \$2784.00.
 - b. What percent of Barney's monthly net income is housing? 32%
 - c. What percent of Barney's monthly net income is transportation? 19%
 - d. Why is the medical insurance premium not included in this budget? In Barney's case, it is listed as a deduction. This means that it is paid before calculating his net income.
 - e. What is the total of Barney's taxes for one month? $2(\$289.90 + \$119.66 + \$27.99) = \875.10
 - f. What percent of Barney's monthly gross income are taxes? $\$875.10/\$3860 = 23\%$
 - g. Why did Barney not include a category for taxes in his budget? The taxes were not part of his net income.

Elaborate

7. Distribute **Activity 7.2-2** to each student. Keep students in small groups. Explain that there are many reasons for creating a budget. Consider that your budget is calculated for a monthly net income of \$4200. If you are laid off and find a new job that only pays \$3800, you can use your existing budget to decide what expenses can be reduced.
8. Read the introduction on **Activity 7.2-2** to the students.

Barney's girlfriend, Betty, is still in college. She is determined not to get a loan to pay for tuition and books. Therefore she lives at home and works part-time. She knows that if she can save \$300 every month, she will have enough money to pay for next semester's college tuition and books. Every month Betty spends more money than she makes. Her father has been giving her money when she overspends. He has explained that he will no longer bail her out.

Barney has agreed to help Betty balance her budget. First, he asked her to gather all of her receipts for the month of August and enter the cost in the budget worksheet below.

9. Instruct the students to calculate Betty's expenses. Then answer questions a - c.
 - a. How much does Betty have available to spend each month? **(\$850)**
 - b. How much did Betty spend in August? **(\$1035)**

c. How much does Betty need to cut back each month? **(\$185)**

10. Write “Fixed Expenses” and “Variable Expenses” on the board. Draw a line between the two terms. Have students read (d) the definition of a fixed expense. **Fixed expenses** are those expenses that remain the same each month. Ask students to write on their worksheet two examples of expenses that are fixed. After 1 minute, have students share their examples with their group. Then have one student from each group write one example on the board in the Fixed Expenses column. **(Sample: rent, car payment, cell phone)** For each item listed on the board, ask: *Will the cost for this item be the same every month?* Some items may be debatable. The class will need to come to a compromise. For example, a cell phone service bill may be fixed for those consumers who have unlimited text and unlimited calls or for those consumers who never exceed their limits. For those consumers who have limits and often exceed those limits, the cell phone service fee will vary. For some families, a savings account is fixed because they use the “Pay yourself first” method. This means that they first deposit a fixed amount into a savings and then stretch the remainder of their income to cover other expenses. Others will pay their expenses first. The remaining balance will be deposited into a savings. This deposit will vary month to month or paycheck to paycheck.
11. Have the students read (e) the definition of a variable expense. **Variable expenses** are those expenses that vary from month to month. Ask students to write two examples of expenses that vary from month to month on their activity sheet. After one minute, have students share their examples with their group. Then have one student from each group, write one example on the board in the Variable Expenses column. **Sample: food, utilities, entertainment, clothes** Once again, some items may be debatable. Go over each item and discuss the circumstances where the expense is a variable expense and circumstances where it might be considered a fixed expense.
12. Then have students read (f) and complete task.

Since Betty will need to make adjustments to her budget, Barney will have her identify in column 1 if the item is a fixed expense or a variable expense. In column 1, write “F” for fixed expense and “V” for variable expense.
13. Explain to student that each group will need to decide if the item is a fixed or variable expense. Some groups may differ when identifying the expense. The teacher should circulate and ask groups to explain how they made their decision on various expenses.
14. The remainder of the activity is self-guided. Allow groups to complete the remainder of the activity.
15. Distribute chart paper and markers to each group. After students have completed the activity, have students write their plan for Betty’s budget on chart paper. Have one member from each group explain how they adjusted Betty’s budget. Ask students how they know the budget is balanced? **(The total expenses should equal \$850 which is the same as Betty’s net income.)**

Elaborate

16. Take the students to a computer lab with Internet access. Distribute **Activity 7.2-3** to

each student. Say: *Now it is time for you to take a reality check. Have you thought about your future? What will your budget look like? What type of an occupation do you need to afford this budget? The following simulation will help you make these decisions.*

17. Have the students follow the directions on **Activity 7.2-3**. When they have completed the activity, have them share with a partner their future budget; what salary they will need to live the lifestyle to pay for the expenses on the budget; and an occupation that will pay this salary.

Evaluate/End

18. For closure pose the following questions.

- What is net income? (***The amount of money you receive for work after deductions are subtracted.***)
- What are fixed expenses? (***Expenses that are the same week to week or month to month.***)
- What are variable expenses? (***Expenses that vary week to week or month to month.***)
- What is the purpose of a budget? (***To help someone plan for their spending and saving.***)

Activity 7.2-1

Name _____ Class Period _____

Directions: Read the steps for creating a monthly budget below. Then help Barney create a budget by filling in the missing information.

Barney has been working full-time for 3 months. He knows the importance of keeping financial records. Therefore, he decides to begin by creating a budget.

Step 1: Calculate the monthly net income.

Below is Barney's semi-monthly paycheck stub.

Employee: Barney Smith	Gross Pay		\$1930.00
	Deductions:		
Pay Period: 09/01/2013 to 09/13/2013	Federal Income Tax	\$289.90	
	Social Security Tax	\$119.66	
	Medicare Tax	\$27.99	
	Medical Premium	\$100.00	
	Total Deductions		
	Net Income		

- a. Calculate Barney's total deductions by adding the federal taxes and his medical premium. Enter this number in the last column for Total Deductions on his paycheck stub.

- b. Subtract Barney's Total Deductions from his Gross Pay. Enter this number in the last column for Net Pay on his paycheck stub.

- c. Barney receives a semi-monthly paycheck. What does this mean? _____

- d. What is Barney's monthly net income? _____

Step 2: Categorize monthly expenses.

Listed below are Barney’s monthly expenses.

House payment \$900	Electricity \$122
Clothes \$120	Retirement Savings \$150
Car payment \$240	Gasoline and car maintenance \$170
Entertainment \$200	Cell phones \$89
Emergency savings \$100	Water and gas \$52
Restaurants \$175	Groceries \$275
Car insurance \$120	Miscellaneous \$71

List his expenses under the appropriate category and find the total amount for that category.

Housing	Amount	Food	Amount	Utilities	Amount
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Total	_____	Total	_____	Total	_____

Savings	Amount	Transportation	Amount	Other	Amount
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Total	_____	Total	_____	Total	_____

Step 3: List categories and their total in the budget worksheet.

Using the information above, complete the budget sheet below. Round each percent to the nearest whole number.

Monthly Budget Worksheet		
Monthly Net Income:		
Expenses	Cost	Percentage of Monthly Net Income
Housing:		
Food:		
Utilities:		
Savings:		
Transportation:		
Other:		
Total Expenses:		

- a. Does Barney spend more than he makes? Explain. _____
- b. What percent of Barney's monthly net income is housing? _____
- c. What percent of Barney's monthly net income is transportation? _____
- d. Why is the medical insurance premium not included in this budget? _____
- e. What is the total of Barney's taxes for one month? _____
- f. What percent of Barney's monthly gross pay are taxes? _____
- g. Why did Barney not include a category for taxes in his budget? _____

Key 7.2-1

Name _____ Class Period _____

Directions: Read the steps for creating a monthly budget below. Then help Barney create a budget by filling in the missing information.

Barney has been working full-time for 3 months. He knows the importance of keeping financial records. Therefore, he decides to begin by creating a budget.

Step 1: Calculate the monthly net income.

Below is Barney's semi-monthly paycheck stub.

Employee: Barney Smith	Gross Pay		\$1930.00
	Deductions:		
Pay Period: July 2013	Federal Income Tax	\$289.90	
	Social Security Tax	\$119.66	
	Medicare Tax	\$27.99	
	Medical Premium	\$100.00	
	Total Deductions		<u>\$537.55</u>
	Net Income		<u>\$1392.45</u>

- Calculate Barney's total deductions by adding the federal taxes and his medical premium. Enter this number in the last column for Total Deductions on his paycheck stub.
 $\$289.90 + \$119.66 + \$27.99 + \$100.00 = \$537.55$
- Subtract Barney's Total Deductions from his Gross Pay. Enter this number in the last column for Net Pay on his paycheck stub. **$\$1930.00 - \$537.55 = \$1392.45$**
- Barney receives a semi-monthly paycheck. What does this mean? **He gets paid twice a month.**
- How much money will Barney bring home monthly? **$\$2784.90$**

Step 2: Categorize monthly expenses.

Listed below are Barney's monthly expenses.

House payment \$900	Electricity \$122
Clothes \$120	Retirement Savings \$150
Car payment \$240	Gasoline and car maintenance \$170
Entertainment \$200	Cell phone \$89
Emergency savings \$100	Water and gas \$52
Restaurants \$175	Groceries \$275
Car insurance \$120	Miscellaneous \$71

List his expenses under the appropriate category and find the total amount for that category.

Housing	Amount	Food	Amount	Utilities	Amount
<u>House payment</u>	<u>\$900</u>	<u>Restaurants</u>	<u>\$175</u>	<u>Electricity</u>	<u>\$122</u>
_____	_____	<u>Groceries</u>	<u>\$275</u>	<u>Water and gas</u>	<u>\$52</u>
_____	_____	_____	_____	_____	_____
Total	<u>\$900</u>	Total	<u>\$450</u>	Total	<u>\$174</u>

Savings	Amount	Transportation	Amount	Other	Amount
<u>Retirement</u>	<u>\$150</u>	<u>Car payment</u>	<u>\$240</u>	<u>Clothes</u>	<u>\$120</u>
<u>Emergency</u>	<u>\$100</u>	<u>Car insurance</u>	<u>\$120</u>	<u>Entertainment</u>	<u>\$200</u>
_____	_____	<u>Gas and main.</u>	<u>\$170</u>	<u>Cell phone</u>	<u>\$89</u>
_____	_____	_____	_____	<u>Misc.</u>	<u>\$71</u>
Total	<u>\$250</u>	Total	<u>\$530</u>	Total	<u>\$480</u>

Step 3: List categories and their total in budget worksheet.

Using the information above, complete the budget sheet below. Round each percent to the nearest whole number.

Monthly Budget Worksheet Monthly Net Income: \$2784.90		
Expenses	Cost	Percentage of Net Income
Housing:	\$900	32%
Food:	\$450	16%
Utilities:	\$174	6%
Savings:	\$250	9%
Transportation:	\$530	19%
Other:	\$480	17%
Total Expenses:	\$2784	99%

- a. Does Barney spend more than he makes? Explain. **No. Barney's monthly net income is \$2784.90 and his expenses are also \$2784.00.**
- b. What percent of Barney's monthly net income is housing? **32%**
- c. What percent of Barney's monthly net income is transportation? **19%**
- d. Why is the medical insurance premium not included in this budget? **In Barney's case, it is listed as a deduction. This means that it is paid before calculating his net income.**
- e. What is the total of Barney's taxes for one month? **2(\$289.90 + \$119.66 + \$27.99) = \$875.10**
- f. What percent of Barney's monthly gross pay are taxes? **\$875.10 ÷ \$3860 = 23%**
- g. Why did Barney not include a category for taxes in his budget? **The taxes were not part of his net income.**

Activity 7.2-2

Name _____ Class Period _____

Barney's girlfriend, Betty, is still in college. She is determined not to get a loan to pay for tuition and books. Therefore, she lives at home and works part-time. She knows that if she can save \$300 every month, she will have enough money to pay for next semester's college tuition and books. Every month Betty spends more money than she makes. Her father has been giving her money when she overspends. He has explained that he will no longer bail her out.

Barney has agreed to help Betty balance her budget. First, he asked her to gather all of her receipts for the month of August and enter the cost in the budget worksheet below.

Monthly Budget Worksheet			
Monthly Net Income: \$850.00			
Fixed or Variable?	August Expenses	Actual Expenditures	Monthly Budget
	Rent to her parents:	\$50	
	Food:	\$250	
	Cell phone:	\$90	
	Savings:	\$300	
	Transportation: (\$1 round trip each school day)	\$20	
	Manicure:	\$40	
	Beauty Shop:	\$50	
	Entertainment:	\$75	
	Clothes:	\$75	
	Morning coffee at The Coffee Place:	\$85	
	Total Expenses:		

- How much does Betty have available to spend each month? _____
- How much did Betty spend in August? _____
- How much does Betty need to cut back each month? _____

- d. **Fixed expenses** are those expenses that remain the same each month. Give two examples of expenses that are fixed. _____
- e. **Variable expenses** are those expenses that vary from month to month. Give two examples of expenses that vary from month to month. _____
- f. Since Betty will need to make adjustments to her budget, Barney will have her identify in column 1 if the item is a fixed expense or a variable expense. In column 1, write “F” for fixed expense and “V” for variable expense.
- g. Which type of the expenses can be adjusted? _____
- h. Since the fixed expenses cannot be adjusted, transfer these cost to column 4.
- i. Decide which variable expenses can be reduced. Then, adjust Betty’s expenses in column 4 so that the net income = expenses. This is Betty’s new budget!
- j. Which expenses did you decide to adjust? Explain why you made these choices.

Key 7.2-2

Name _____ Class Period _____

Barney's girlfriend, Betty, is still in college. She is determined not to get a loan to pay for tuition and books. Therefore, she lives at home and works part-time. She knows that if she can save \$300 every month, she will have enough money to pay for next semester's college tuition and books. Every month Betty spends more money than she makes. Her father has been giving her money when she overspends. He has explained that he will no longer bail her out.

Barney has agreed to help Betty balance her budget. First, he asked her to gather all of her receipts for the month of August and enter the cost in the budget worksheet below.

Monthly Budget Worksheet			
Net Income: \$850.00			
Fixed or Variable?	August Expenses	Actual Expenditures	Sample Monthly Budget
F	Rent to her parents:	\$50	\$50
V	Food:	\$250	\$150
*	Cell phone:	\$90	\$90
F**	Savings:	\$300	\$300
*	Transportation: (\$1 round trip each school day)	\$20	\$20
V	Manicure:	\$40	\$0
V	Beauty Shop:	\$50	\$30
V	Entertainment:	\$75	\$75
V	Clothes:	\$75	\$75
V	Morning coffee at The Coffee Place:	\$85	\$10
	Total Expenses:	\$1035	\$850

**These items could be variable expenses or fixed expenses. Require students to provide a justification for their selection.*

***In Betty's case, she has specified that she will save \$300 per month. Therefore, this will be a fixed expense.*

- How much does Betty have available to spend each month? **\$850**
- How much did Betty spend in August? **\$1035**
- How much does Betty need to cut back each month? **\$185**

- d. **Fixed expenses** are those expenses that remain the same each month. Give two examples of expenses that are fixed. **Sample: rent, car payment, cell phone**
- e. **Variable expenses** are those expenses that vary from month to month. Give two examples of expenses that vary from month to month. **Sample: food, utilities, entertainment, clothes**
- f. Since Betty will need to make adjustments to her budget, Barney will have her identify in column 1 if the item is a fixed expense or a variable expense. In column 1, write “F” for fixed expense and “V” for variable expense. **See table for sample answers.**
- g. Which type of the expenses can be adjusted? **Variable expenses**
- h. Since the fixed expenses cannot be adjusted, transfer these costs to column 4. **See table.**
- i. Decide which variable expenses can be reduced. Then, adjust the Betty’s expenses in column 4 so that the net income = expenses. This is Betty’s new budget! **See table for sample.**
- j. Which expenses did you decide to adjust? Explain why you made these choices. **Sample response: Food has been reduced by \$100. Betty should take her lunch to school and eat out less. The manicure has been deleted. Betty can fix her own nails. The beauty shop has been reduced to \$30. Betty can find a more affordable place to cut her hair. Coffee expense has been reduced to \$10. Betty can make coffee at home.**

Activity 7.2-3

Name _____ Class Period _____

Texas Reality Check

Now it is time for you to take a reality check. Have you thought about your future? What will your budget look like? What type of an occupation do you need to afford this budget? The following simulation will help you make these decisions.

1. Go to the following website: <http://www.texasrealitycheck.com>
2. Choose **1 Reality Check** by clicking on the red arrow.
3. Choose the city where you would like to live, then choose your expenses.
4. Once you have completed the first phase, Texas Reality Check will create your budget. Fill in your Texas Reality Check budget below.

Your Monthly Expenses	City:
Housing	
Utilities	
Food	
Transportation	
Clothes	
Health Care	
Personal	
Entertainment	
Misc	
Savings	
Student Debt Loan	
Monthly Expenses	
Annual Expenses	
Taxes (25% of Annual Expenses)	
Annual Salary Needed	

5. What occupation will give you the annual salary you need? Follow the **Find Careers** by clicking on the blue arrow to get information about what occupations will pay the annual salary you need.

Occupation: _____ Annual Salary: _____

What type of training is required for this occupation? _____

Use the space below to write important information about this occupation.