

Name(s): Carl Nyberg

Date: Summer 2013

Lesson Title: Charting a Budget

Text: Financial Algebra (10 - 4)

Lesson Length: 2 Days - 50 Minute Periods

CCSS-M:

A-SSE1, F-BF1

Mathematical Process:

Reason Abstractly and Quantitatively, Modeling, Use Tools Strategically.

Objectives:

Develop and interpret a cash flow chart, a frequency budget plan, a year-long expense budget plan.

Language Objectives:

Common Misconceptions:

- which number to divide by in debt-to-income ratio.

Materials:

Ruler

Graph Paper

Note Paper

Plan:

Day 1:

1. Students will be focusing on the vocabulary in this section. The need to be very comfortable in the difference between fixed and variable expenses. Give them a random selection of items and ask them to determine if they are fixed or variable expenses. **Look at the lesson quiz for this section first if you plan on using it so you know what budget items are on it.**
2. Next explain the term cash flow to the students. Remind them that cash flow could be negative if the income is less than the expenses. Have a discussion about how someone could be surviving with a negative cash flow. (example using savings, early retirement withdraws)
3. Have them review the cash flow template on pg. 510. Explain that the categories are the important piece and that you determine what goes under each category.
4. Next work example #2 with the students. It is important that students understand about how to convert expenses or income so that they are in the same time unit. (monthly, annually)
5. Skip to example #6. Students often forget that the income is the number the enter 2nd into the calculator. Stress this. Also remind them that the time units (monthly, annually) must match before they can divide. Practice converting decimals to percents.
6. What does it mean to have a high debt-to-income ratio? What is a low ratio mean? Make sure that they check to see if the ratio fits into the recommended category or not. Extension questions: talk about corporation.
7. Have the students do check your understanding for this example.
8. Assign #5, 6, and 7 for homework from section 10-4 applications.

Day 2:

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1. Show the students the example of the Frequency budget Plan. Remind them that the categories are set, but they determine what information is needed under each category.
2. Explain how to use the frequency column and amount column to calculate the annual amount column.
3. Have students explain what annual surplus or deficit means. What would a deficit represent. How does that relate to cash flow from yesterday.
4. Show them the year long expense budget on pg. 515. Again the categories are set but the information is determined by the user of the form.
5. Have students discuss what is different and similar about this format compared to the Frequency Budget.
6. Define Net Worth for the students. Show them example 5.
7. Have the students discuss with a neighbor the check your understanding question for this example. Have them share out a few ideas that they come up with.
8. Assign problems 8, 9, and 12 for homework from 10-4 application.

Math Council

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10-4 Quiz

Name: _____

Date: _____

Period: _____

1. What is Cash Flow?
2. Classify each as a Fixed or Variable expense.
Car Payment:
House Payment:
Cell Phone:
Insurance:
Water:
Electricity:
Food:
3. On average 13% - 19% of your budget is spent on food. The Smith's have the following values for food expenses in their monthly budget: Eating out \$120, School Lunches: \$150, Groceries: \$350. If their total annual income is \$42,500 is the monthly food budget within the average amount?
4. Based on the following information, determine Mike's net worth:
Assets
Current Value of House: \$350,000
Current Value of Truck: \$18,500
Balance of Savings Account: \$500
Current Balance in Retirement Account: \$1,500
Current Value of Boat: \$1,850
Liabilities
Remaining balance on home mortgage: \$250,000
Remaining balance on student loans: \$45,000
Credit Card debt: \$4,000
Remaining Balance on Truck loan: \$8,000
5. Jim's total monthly liabilities are \$4,500. His yearly salary is \$67,540. What is his monthly debt-to-income ratio?

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10-4 Quiz Answer Key

1. What is Cash Flow? **The total amount of money coming in and going out on a budget**

2. Classify each as a Fixed or Variable expense.

Car Payment: **Fixed**

House Payment: **Fixed**

Cell Phone: **Variable**

Insurance: **Fixed**

Water: **Variable**

Electricity: **Variable**

Food: **Variable**

3. On average 13% - 19% of your budget is spent on food. The Smith's have the following values for food expenses in their monthly budget: Eating out \$120, School Lunches: \$150, Groceries: \$350. If their total annual income is \$42,500 is the monthly food budget within the average amount?

Monthly Income = $42,500 / 12 = \$3,541.67$

Total food expenses = \$620

$620 / 3541.67 = .175 \times 100 = 17.5\%$

Yes, their food expenses are within the average percentages.

4. Based on the following information, determine Mike's net worth:

Assets

Current Value of House: \$350,000

Current Value of Truck: \$18,500

Balance of Savings Account: \$500

Current Balance in Retirement Account: \$1,500

Current Value of Boat: \$1,850

Liabilities

Remaining balance on home mortgage: \$250,000

Remaining balance on student loans: \$45,000

Credit Card debt: \$4,000

Remaining Balance on Truck loan: \$8,000

Total Assets = \$372,350

Total Liabilities = \$307,000

Net Worth = $372,350 - 307,000 = \$65,350$

5. Jim's total monthly liabilities are \$4,500. His yearly salary is \$67,540. What is his monthly debt-to-income ratio?

Monthly salary = $67,540 / 12 = \$5,628.33$

Debt-to-income ratio = $4,500 / 5,628.33 = .80 = 80\%$