

Lesson Plan

Debt Elimination - Power Tools for Building Wealth

Objective

Offer different strategies for eliminating debt and strengthening one's financial position and cash flow.

Students will be able to:

- Calculate the minimum payment required to reduce a debt
- Understand two different approaches to achieving debt-free living
- Calculate timeframes and budget requirements for eliminating debt
- Determine which approach fits their comfort zone

Consumer Math Standards and Benchmarks

Common Core State Standards Initiative (CCSSI): The CCSSI was developed by the Federal Government in an attempt to standardize learning practices across states and to assist students in being better prepared for college and higher education.

CCSSI Mission Statement: The Common Core State Standards Initiative provides a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy.

This lesson corresponds with the eight Standards for Mathematical Practice as published by CCSSI:

Mathematical Practices

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

Teaching Materials

- Lesson plan with answer key for student exercise
- Lesson plan content document
- Assessment/evaluation exercise document

Lesson Activity

- Talk to students about wealth
 - Ask students how many of them plan to be wealthy
 - What specific plans do they have for becoming wealthy?
 - How will they know when they have achieved wealth?
 - Ask for definitions of wealth; can they agree on the definition?

Introduce “Power Tools for Building Wealth” (see attachment)

- Ask students to read the first page
- What is the definition of wealthy?
- What is the difference between rich and wealthy?
- What is a budget and how can it be seen as a tool for building wealth?
- How does carrying debt affect a budget?
 - How would eliminating debt affect that budget?

Two Strategies for Building Wealth

- Mathematical strategy and debt snowball approach (also known as psychological strategy)
- Since a wealthy person is defined as: a person that spends less money than s/he earns, build wealth by:
 - Earning more money, and
 - Spending less money
- Page 2 presents the formula for calculating a minimum monthly payment necessary to eliminate a debt at a certain interest rate over a defined period of time

The formula to calculate the monthly payment on an original principal loan amount (**P**) at an annual interest rate (**I**) that will be necessary to pay off the entire loan in (**N**) months is:

$$\text{MonthlyPayment} = \frac{(P \times (I \div 12))}{(1 - (1 + (I \div 12))^{-N})}$$

P = Principal amount of the loan

I = Interest rate of the loan

N = Number of months in which you wish to eliminate the loan

Work through the presented example, and make sure students know how to do a calculation with negative exponents:

$$a^{-N} = \frac{1}{a^N}$$

Example:

$$2^{-3} = \frac{1}{2^3} = \frac{1}{8}$$

Mathematical Strategy

- The preferred method for financial advisors
 - Focus on the debt with the highest interest rate
 - Eliminate the most expensive interest first
- Four hypothetical debts are presented
- Use the minimum payment formula to calculate payments for each
- Sort the debts in ascending order of interest rate
- Work through the example presented
 - Show available funds being directed toward specific debts
- Use the amortization calculation to determine how many months it will take to eliminate each debt

The calculations presented were done using an online loan payment calculator and amortization. It would take considerable time to calculate months of data and arrive at accurate totals without one. You can access the calculator from Bankrate.com at:
www.bankrate.com/calculators/mortgages/loan-calculator.aspx

Debt Snowball Approach

- The preferred method for those needing positive feedback and reinforcement quickly
 - Focus on debt with the lowest balance
 - Eliminate smallest debt first
 - Debt disappears more quickly, so progress seems faster
- Four hypothetical debts are presented
- Use the minimum payment formula to calculate payments for each
- Sort the debts in descending order of balance
- Work through the example presented
 - Show available funds being directed toward specific debts

Conclusion

- The timeframe for eliminating debts using either method was about the same, but there is a significant difference in the amount of interest paid
- Poll the students and see how they feel about the methods
 - Is one method preferred over the other?

Assessment

- An assessment of the presented material
 - 10 question multiple choice assessment
 - Lesson document should be allowed as a resource, as the assessment utilizes formulas presented in the lesson
- Assessment answer key

Assessment Answer Key

1. B
2. C
3. A
4. C
5. D
6. D
7. A
8. D
9. B
10. D