Personal Savings Plan Worksheet

Chapter 5.2: Understanding the Power of Compound Interest and the Rule of 72

This worksheet will help you create a personalized savings plan using compound interest principles. You'll select financial goals, determine target amounts and timeframes, and calculate savings strategies to achieve those goals.

Name: _____ **Date:** _____

Part 1: Goal Identification

Start by identifying both short-term and long-term financial goals. Think about what you want to save for and when you want to achieve these goals.

Short-Term Goal (1-5 years)

Goal Description:

Example: Car down payment, travel fund, emergency fund

Target Amount ($):

Example: 5000

Time Frame (years):

1-5 years

Priority Level:

High (Essential)

Long-Term Goal (6+ years)

Goal Description:

Example: College fund, house down payment, retirement

Target Amount ($):

Example: 50000

Time Frame (years):

6+ years

Priority Level:

High (Essential)

Part 2: Savings Calculation for Short-Term Goal

For your short-term goal, you'll calculate:

1. How much you would need to invest as a lump sum today
2. How much you would need to save monthly

Lump Sum Calculation

Use this formula to calculate how much you would need to invest as a single deposit to reach your goal:

Lump Sum = Target Amount ÷ $(1 + r)^t$

Where r is the annual interest rate (as a decimal) and t is the time in years.

Step-by-Step Calculation:

1. Enter your target amount: $
2. Enter the expected annual interest rate: %
3. Enter your time frame: years
4. Convert the interest rate to a decimal:
5. Calculate $(1 + r)^t$:
6. Calculate Lump Sum = Target Amount ÷ Result from step 5: $

Required Lump Sum Investment:

Monthly Contribution Calculation

If you can't invest a lump sum, calculate how much you would need to save monthly:

Monthly Contribution = Target Amount ÷ $[((1 + r/12)^n - 1) ÷ (r/12)]$

Where r is the annual interest rate (as a decimal) and n is the total number of months.

For complex calculations like this one, you can use an online calculator. Search for

"monthly savings calculator" or use a financial calculator app.

Using an Online Calculator:

1. Target amount: $
2. Time period: years (or months)
3. Expected annual interest rate: %
4. Calculated monthly contribution: $

Required Monthly Contribution:

Example Calculation:

Goal: Save $5,000 for a vacation in 3 years with a 4% annual interest rate.

Lump Sum Calculation:

Lump Sum = $5,000 ÷ $(1 + 0.04)^3$

Lump Sum = $5,000 ÷ 1.125

Lump Sum = $4,444.44

Monthly Contribution Calculation:

Using a savings calculator with $5,000 target, 3 years (36 months), and 4% interest:

Monthly Contribution = $132.25

Part 3: Savings Calculation for Long-Term Goal

For long-term goals, compound interest has an even more dramatic effect.

For your long-term goal, you'll calculate:

1. How much you would need to invest as a lump sum today
2. How much you would need to save monthly
3. How many times your money might double using the Rule of 72

Lump Sum Calculation

Step-by-Step Calculation:

1. Enter your target amount: $
2. Enter the expected annual interest rate: %
3. Enter your time frame: years
4. Convert the interest rate to a decimal:
5. Calculate $(1 + r)^t$:
6. Calculate Lump Sum = Target Amount ÷ Result from step 5: $

Required Lump Sum Investment:

Monthly Contribution Calculation

Using an Online Calculator:

1. Target amount: $ _____

2. Time period: _____ years (or _____ months)

3. Expected annual interest rate: _____ %

4. Calculated monthly contribution: $ _____

Required Monthly Contribution:

Rule of 72 Application

Use the Rule of 72 to see how many times your money could double over your investment period:

Calculation:

1. Years to double = 72 ÷ Interest rate (%): _____ years

2. Number of doublings = Time frame ÷ Years to double: _____ doublings

3. Final multiplier = $2^{\text{Number of doublings}}$: _____ times original amount

This means if you invested $1,000 today, it could grow to approximately $ _____ over your time frame.

Part 4: Savings Strategy Development

Based on your calculations, develop a practical savings strategy that works within your current financial situation.

Financial Assessment

Current Monthly Income: $

Example: 2500

Current Monthly Expenses: $

Example: 2000

Available for Savings/Investment: $

Example: 500

Current Savings/Emergency Fund: $

Example: 1000

Savings Allocation Plan

Based on your available savings amount, how will you allocate funds toward your goals?

Amount to allocate to Short-Term Goal: $

Example: 200

Amount to allocate to Long-Term Goal: $

Example: 200

Amount to allocate to Emergency Fund: $

Example: 100

How does this allocation compare to the required amounts from your calculations?

Specific Action Steps

List 3-5 specific actions you'll take to implement your savings plan:

Action 1:

Example: Set up automatic transfer of $200 on payday

Action 2:

Example: Research high-yield savings accounts

Action 3:

Example: Cut subscription services to save $30/month

Action 4:

Action 5:

Part 5: Reflection and Adjustments

Impact of Compound Interest

Reflect on how compound interest will help you reach your goals:

How much of your short-term goal amount will come from interest versus your contributions?

How much of your long-term goal amount will come from interest versus your contributions?

What did you find most surprising about the power of compound interest in your calculations?

Plan Adjustments

Consider potential adjustments to optimize your savings plan:

What would happen if you increased your interest rate by 1% (through a different savings vehicle or investment)?

What would happen if you extended your time frame by 2 years?

What would happen if you increased your monthly contribution by $50?

Final Savings Plan Summary

Summarize your final savings plan for each goal:

Short-Term Goal Plan:

Long-Term Goal Plan:

How will you track your progress toward these goals?