

# Financial Planning



Me,  
Myself,  
My Money



# Financial Planning

## Learning Objectives

### Lesson 1

#### **Budgeting: How to Live on Your Own and Not Move Home in a Week**

- Prepare a budget and determine disposable income.
- Identify necessary or essential expenses and discretionary or non-essential expenses.

### Lesson 2

#### **Taxes: Who's FICA, and Why Does He Get Part of My Paycheck?**

- Calculate gross income and taxable income.
- Calculate Social Security tax, Medicare tax, and federal and state income tax.

### Lesson 3:

#### **Retirement Plans: Saving for Retirement – It's Never Too Early to Start!**

- Compare and contrast defined benefit retirement plans and defined contribution retirement plans.
- Determine an annual pension provided by a defined benefit retirement plan.
- Determine employee and employer contributions to a defined contribution retirement plan.



# INTRODUCTION

## Learning Standards (grades 9-12)

### Business

#### Connecticut Department of Education

##### *Business and Finance Technology – Accounting*

- Calculate deductions including federal income tax, Social Security, Medicare, state income tax, and other deductions to determine net pay.

##### *Business and Finance Technology – Business Management*

- Develop and evaluate a spending/savings plan.
- Evaluate savings and investment options to meet short-term and long-term goals.

##### *Cooperative Work Education*

- Compare and contrast wage benefit packages.
- Compare and contract strategies for personal finance and risk management.
- Demonstrate the ability to set, monitor and achieve clearly defined goals.

#### National Business Education Association

##### *Economics & Personal Finance – Saving and Investing*

- Differentiate between saving and investing.
- Describe the advantages and disadvantages of various savings and investing plans.

##### *Economics & Personal Finance – Personal Decision Making*

- Differentiate between types of decisions and identify those for which a formal decision-making process should be used.
- Apply the decision-making process to various types of decisions at different stages of the life cycle.

##### *Computation – Taxation*

- Compute personal federal and state income taxes.
- Calculate pension income from Social Security, company or union plans, or retirement accounts.

##### *Computation – Payroll and Human Resource Management*

- Calculate gross earnings.
- Calculate payroll withholdings, Social Security and Medicare deductions, other deductions, and net earnings.

##### *Computation – Number Relationships and Operations*

- Solve problems that involve whole numbers, decimals, and fractions, and use appropriate conversions.
- Solve problems that involve percents, ratios, averages, and proportions and use appropriate

##### *Computation – Cash Management*

- Prepare a budget.

##### *Economics & Personal Finance – Earning and Reporting Income*

- Differentiate between gross income and net income.
- Describe different types of taxes.
- Explore potential deductions and credits on a tax return.
- Calculate personal tax liabilities for various types of taxes.
- Calculate net pay.

##### *Economics & Personal Finance – Managing Finances and Budgeting*

- Construct and use a personal spending/savings plan.
- Categorize expenses as fixed or variable.
- Determine discretionary income in a spending plan.



# LESSON 1

## Budgeting: How to Live on Your Own and Not Move Home in a Week

One of the first steps in the financial planning process is to determine your goals and create a budget to meet those goals.

Budgeting is a process or method of determining current and future cash receipts and expenditures, and in many cases requires individuals to estimate those cash flows. The budgeting process results in a budget, which is a financial plan that details the cash to be received (income) and the cash to be paid (expenses) over a period of time.

### Expenses

Expenses are usually categorized by type and by time frame. For instance, expenses can be categorized as **necessary** or **essential** expenses, or **discretionary** or **non-essential** expenses. Necessary expenses are the cost of items that are essential, such as rent or a mortgage, utilities, medical insurance, transportation, home and automobile insurance, and food. Discretionary expenses are the cost of items that are not essential, such as new clothes, vacations, entertainment, and having dinner and other meals at a restaurant.

In addition, expenses are categorized by when they must be paid and are usually budgeted as a weekly expense or a monthly expense. For example, rent or a mortgage, electric bills, phone and cable bills, loan and credit card payments, car payments, and insurance payments are monthly expenses, whereas transportation and food is usually budgeted on a weekly basis.

Other expenses that may be incurred are “emergency” expenses, such as unplanned medical and dental bills and automobile and home repairs.

### Disposable Income

The difference between the cash received (income) and cash paid for necessary or essential expenses is called disposable or discretionary income.

**Disposable or Discretionary Income** = Income\* minus Necessary or Essential Expenses

\*After taxes

When your income is less than your essential expenses, your disposable or discretionary income is negative. If this occurs, you should reduce the amount budgeted for essential expenses.

**Cash Reserve**  
An amount set aside for emergencies and unexpected events, such as losing your job.

**Gross Income**  
Gross income is all income earned, including income from part-time jobs, before taxes are withheld.

**Take-Home Income**  
Income after taxes, such as federal and state income tax withheld and Social Security and Medicare tax withheld.



# LESSON 1

## Saving

Saving is the process of setting aside money for short-term goals, such as buying a car or a home, whereas investing is “putting your money to work” for long-term goals such as retirement. Financial goals such as saving for college or buying a vacation home often require a combination of saving and investing.

More often than not, individuals budget their income and expenses and then determine an amount to save based on their disposable income. This often results in saving a small amount, if anything at all. However, a saving strategy called “Pay Yourself First” is one in which savings is budgeted first, before expenses. The “Pay Yourself First” strategy attempts to force individuals to save by considering savings as a necessary or essential “expense.”

Presented below are suggested guidelines for budgeting, saving, and investing:

- Save at least 10% of your take-home income, i.e., income after taxes.
- Invest at least 10% of your take-home income.
- Spend no more than 28% of your gross income on a mortgage payment, including taxes and insurance.
- Spend no more than 20% of your gross income on rent.

**Inflation**  
Sometimes called the “cost of living,” inflation is the rate (%) at which costs and prices increase. The inflation rate averages 3% per year.



# LESSON 1

## Activity 1: Cliff's Wonderful Financial Adventure

Cliff has been out of school for five years now and he still hasn't managed to organize his personal finances so he can move out of his parent's house. Cliff is seeking your advice to develop a budget so he can save money and move out on his own. Cliff's gross income is \$54,000 a year and his income after taxes is \$3,500 per month.

Assume there are four weeks per month.

1. When you meet Cliff, you explain the "Pay Yourself First" strategy for saving and investing and Cliff agrees to use the strategy to prepare his budget. If Cliff uses the suggested guidelines for saving and investing, what amount will Cliff save and invest each month and what amount will remain for expenses?
2. Based on suggested guidelines, what amount should Cliff budget each month for rent?
3. Cliff is planning to buy a new sports car that will cost \$450 per month. The car insurance will cost Cliff \$3,600 per year and require monthly payments. What amount should Cliff budget each month for his new sports car and insurance?
4. Cliff plans to spend \$100 a week on groceries and \$75 a week on gas for the car. What amount should Cliff budget each month for these expenses?
5. Based on Cliff's financial planning, what is his disposable income each month?
6. What expenses has Cliff not considered? Prepare a revised budget for Cliff that includes expenses he initially failed to consider to determine his revised disposable income.

*(continued on next page)*



# LESSON 1

7. If Cliff had planned to spend \$50 every other week to buy new clothes and \$50 a weekend to go out with his friends, will he be able to do so?

8. Based on Cliff's budget, what changes and adjustments should he consider in order to improve his financial position?

9. Which of Cliff's expenses are necessary or essential and which are discretionary or non-essential?

Necessary or Essential Expenses

Discretionary or Non-Essential Expenses

## Activity 2: Budgeting Your Money

Research indicates that single people, on average, spend their income as follows:

- Housing, 20%
- Transportation, 10-20%
- Clothes, 5-15%
- Food, 15-25%
- Entertainment, 5-10%
- Savings, 10%

For each of the categories listed above, indicate the percent of your income that you would spend on each item:

- Housing \_\_\_\_\_%
- Transportation \_\_\_\_\_%
- Clothes \_\_\_\_\_%
- Food \_\_\_\_\_%
- Entertainment \_\_\_\_\_%
- Savings \_\_\_\_\_%

## Taxes: Who's FICA, and Why Does He Get Part of My Paycheck?

The United States employs a progressive federal tax system, which means the tax rate increases as income increases. Presented below are the federal individual income tax rates for 2009.<sup>1</sup>

If your taxable income is between:	The tax rate is:	The tax is:
\$0 and \$8,350	10%	10% of the amount between \$0 and \$8,350
\$8,350 and \$33,950	15%	\$835, plus 15% of the amount between \$8,350 and \$33,950
\$33,950 and \$82,250	25%	\$4,675, plus 25% of the amount between \$33,950 and \$82,250
\$82,250 and \$171,550	28%	\$16,750, plus 28% of the amount between \$82,250 and \$171,550
\$171,550 and \$372,950	33%	\$41,754, plus 33% of the amount between \$171,550 and \$372,950
\$372,950 or more	35%	\$108,216, plus 35% of the amount over \$372,950

To illustrate how taxes are calculated under a progressive tax system, assume your taxable income is \$50,000, which means you fall within the 25% "tax bracket." Therefore, your federal taxes are equal to \$4,675, plus 25% of the amount over \$33,950. Therefore, your federal tax is \$8,687.50:

$$\begin{aligned}
 &= \$4,675 + [25\% \times (\$50,000 - \$33,950)] \\
 &= \$4,675 + [25\% \times \$16,050] \\
 &= \$4,675 + \$4,012.50 \\
 &= \$8,687.50
 \end{aligned}$$

Or,

$$\begin{aligned}
 &= [10\% \times \$8,350] + [(15\% \times (\$33,950 - \$8,350))] + [25\% \times (\$50,000 - \$33,950)] \\
 &= \$835 + [15\% \times \$25,600] + [25\% \times \$16,050] \\
 &= \$835 + \$3,840 + \$4,012.50 \\
 &= \$8,687.50
 \end{aligned}$$

The tax rates shown above are used to calculate federal income taxes. In addition to federal income taxes, most states also assess a state income tax. In Connecticut, income between \$0 and \$10,000 is taxed at 3% and income greater than \$10,000 is taxed at 5%.

Whereas federal income taxes are based on taxable income, Connecticut state income taxes are based on gross income.

<sup>1</sup>Tax rates for individuals that file as single.



## LESSON 2

### FICA

In addition to federal and state income taxes, Social Security taxes — more commonly known as “FICA” taxes — are deducted from your income. The **Federal Insurance Contributions Act (FICA)** is a payroll tax paid by both employees and employers to fund Social Security and Medicare, federal programs that provide benefits for retirees, the disabled, and children of deceased workers.

Both employees and employers pay 6.2% of your salary, up to an annual limit of \$106,800<sup>2</sup> for Social Security taxes, and 1.45% of your salary for Medicare taxes. (There is no income limit on Medicare tax.) Self-employed individuals pay both the employer and employee share of Social Security (12.4%) and Medicare (2.9%) taxes.

### Income Taxes

Taxes are deducted each pay period as a means to pre-pay your tax obligation at the end of the year. Taxpayers must complete and file **Form 1040**, the U.S. Individual Income Tax Return, with the Internal Revenue Service (IRS) by April 15th of each year for the preceding year. The purpose of filing Form 1040 is to determine if additional taxes are required to be paid or if taxes paid during the year are in excess of the amount owed and a refund is in order. In addition, Connecticut residents must report their income and taxes by filing **Form 1040-CT** with the Connecticut Department of Revenue Services.

The amount of income subject to tax is called **taxable income**, which is equal to your gross income, less exemptions and other allowable deductions. Gross income is all income earned, such as wages, interest, dividends, and business income. A **tax exemption** reduces the amount of income subject to tax. Taxpayers are granted a \$3,650<sup>3</sup> exemption for themselves and every dependent. A dependent is someone related to the taxpayer or someone the taxpayer supports financially, such as their spouse and children.

Taxpayers are also allowed deductions, which reduce their taxable income. Taxpayers can deduct the greater of the **standard deduction** (\$5,700<sup>4</sup>) or “**itemized deductions**.” Itemized deductions include medical expenses, state income taxes, interest on home mortgages, donations and gifts to charities, and other allowable miscellaneous expenses. Itemized deductions are reported on **Schedule A** and filed with Form 1040.

#### Form W-2

Form W-2 reports your prior year’s salary and tax (federal income tax, state income tax, Social Security tax, and Medicare tax) withheld during the year. Form W-2 is prepared by employers and provided to employees at the end of the year and is used to complete individual income tax forms.

Paying part of your tax obligation each pay period is referred to as “paying as you go.”

#### Form W-4

Employees complete Form W-4 to determine the amount of federal income tax to be withheld (deducted) from each paycheck. The amount deducted is based on your marital status (single or married), the number of allowances claimed (usually equal to the number of dependents), and your salary. Each allowance claimed reduces the amount of tax withheld; therefore, the greater the number of allowances, the less tax withheld.

<sup>2</sup>For 2009

<sup>3</sup>For 2009

<sup>4</sup>For 2009



## LESSON 2

### Activity 1: Another Day, Another Dollar—or 70¢ After Taxes!

Ray is single with no dependents and lives in Connecticut. In 2009, he earned \$125,000 working as a senior manager for a CPA firm.

1. What amount of Social Security tax and Medicare tax would be withheld from Ray's salary for the year?
2. What amount of Social Security tax and Medicare tax is paid by Ray's employer, the CPA firm, on his behalf?
3. What is Ray's gross income if he earned \$5,000 in interest and dividends from investments?
4. How many exemptions can Ray claim and what amount can he deduct from his gross income based those exemptions?
5. If Ray paid \$10,000 in interest on a mortgage, had \$6,000 of state income taxes withheld during the year, and gave charitable donations of \$3,000 during the year, what are his total itemized deductions and taxable income?
6. What is Ray's federal income tax?
7. If Ray had \$20,000 of federal taxes withheld during the year, determine whether Ray would owe additional taxes or be due a refund, and the amount.
8. What is Ray's state income tax?
9. Ray had \$6,000 of state taxes withheld during the year. Determine whether Ray would owe additional state taxes or be due a refund, and the amount.
10. What is the total amount of taxes Ray will pay for the year?
11. What percent of Ray's income is paid in taxes?
12. Based on Ray's federal income tax, state income tax, Social Security tax, and Medicare tax for the year, estimate the amount of each tax and the total tax that should be withheld each pay period if Ray is paid twice per month.
13. Based on your estimate of the tax that should be withheld each pay period, estimate Ray's take-home pay.



# Retirement Plans: Saving for Retirement – It’s Never Too Early to Start!

People can rely on a few sources of income when they retire and no longer earn a salary – if they plan and save accordingly. Sources of income in retirement can include Social Security benefits, pension plans, investments, and savings.

## Social Security

The Social Security Act was passed in 1935 under President Franklin D. Roosevelt to provide economic benefits to retired workers. Today, Social Security is a main source, if not the primary source, of income in retirement for many people.

While you are working, you and your employer contribute to the Social Security fund by paying a Social Security tax. Both you and your employer pay FICA (Federal Insurance Contributions Act) taxes equal to 6.2% of your salary, up to a limit of \$106,800<sup>5</sup>. The amount you can collect in retirement depends on the amount of tax you paid while you were working, your date of birth, and your age at retirement.

If you were born after 1960, you can receive the maximum Social Security benefits if you retire when you are 67 years of age. If you retire early—before age 67—you can start collecting your benefits, but the amount will be reduced. The earliest you can start collecting Social Security benefits is age 62, but the amount you receive will be reduced by 30%.

## Retirement Plans

Retirement plans are provided by your employer and generally there are two types: **defined benefit plans** and **defined contribution plans**.

Defined benefit plans, often called a **pension plan**, are funded by your employer and provide employees with a fixed amount of income for life when they retire. In general, the amount of your yearly pension is based on a formula that includes the number of years you worked for your employer, the average of your highest salaries, and your age when you retire. For example, a pension plan may state that annual retirement benefits are calculated based on 2% of the average of your three highest salaries and the number of years worked. So, if the average of your three highest salaries is \$100,000 and you worked 30 years for the company, your annual lifetime pension is \$60,000, which means you will collect \$60,000 per year, every year in retirement:

$$\begin{aligned}\text{Annual pension} &= 2\% \times \text{Average of three highest salaries} \times \text{Number of years worked} \\ &= 2\% \times \$100,000 \times 30 \text{ years} \\ &= \$60,000 \text{ per year}\end{aligned}$$

<sup>5</sup>For 2009



## LESSON 3

The advantage of a defined benefit or pension plan is that you are guaranteed a fixed amount of income in retirement. The disadvantage is that the amount is limited by the pension formula and the income you receive may not be sufficient, especially if the cost of living and your expenses increase. In addition, in most cases, you must reach your retirement age before you can start to collect your pension.

**Defined contribution plans**, unlike defined benefit plans, do not provide a fixed amount of income to employees at retirement. Defined contribution plans are funded by the employee, the employer, or both. In most cases, however, employees fund most of the plan. Contributions to the plan are invested by the employee and the amount available at retirement depends on the amount contributed to the plan by the employee and the employer and the return or profits earned on the investments.

The maximum amount an employee can contribute to their defined contribution plan is \$16,500 per year. (However, if you are 50 years of age or older, you can contribute an additional \$5,500, or a total of \$22,000 per year.) The amount an employer contributes depends on the amount contributed by the employee, is typically stated as a percentage of the employee's salary, and is generally subject to a limit.

For example, assume you earn a salary of \$50,000 and contribute 10% of your salary to your defined contribution plan. In addition, your employer contributes—or “matches”—50% of your contribution, up to a maximum of 6% of your salary, to your plan. In this example, you contribute \$5,000 ( $\$50,000 \times 10\%$ ) to your plan and your employer contributes \$2,500 ( $\$5,000 \times 50\%$ ). (The maximum amount your employer will contribute is \$3,000 ( $\$50,000 \times 6\%$ .) Therefore, a total of \$7,500 is contributed to your plan.

The amount contributed by your employer, \$2,500, is called a “matching contribution.” Note, however, that in this example, and in many instances, the employer's matching contribution is a percent of your contribution (50% in this example) and subject to a limit (6% of your salary in this example).

Defined contribution plans are commonly referred to as a “401(k) plan” or a “403(b) plan,” which is the section of the Internal Revenue Code that allows companies to offer these retirement plans. Defined contribution plans offer employees a tax advantage because contributions to the plan, both the employee's and the employer's, are not taxable in the year the contributions are made. Local, state, and federal government agencies, as well as not-for-profit organizations, offer 403(b) defined contribution plans, while companies offer 401(k) defined contribution plans.

The advantage of a defined contribution plan is that you determine the amount to contribute your plan and how the money is invested. Therefore, if you start contributing at a young age, contribute a significant amount each year, and your investments are profitable, you can accumulate a large sum of money. However, if your investments are not profitable, you can lose money, and in some cases, if you make poor investment choices, you might lose all of your money. Another disadvantage of defined contribution plans is that you must wait until you are age 59½ to withdraw your funds. If you withdraw your funds early, you must pay a 10% fee or penalty. (However, if you withdraw the funds early to pay for the purchase of your first home, medical expenses, and some education expenses, you might be exempt from the penalty.)

Retirement plans contain vesting rules. For a defined benefit plan, vesting refers to the number of years an employee must work for the company in order to be eligible to receive a pension. For a defined contribution plan, vesting refers to the number of years an employee must work for the company in order to keep the employer's contributions to the plan, i.e., the “matching” contributions. Each company has different vesting requirements; however, in general, employees are vested in retirement plans after five years.



## LESSON 3

### Activity 1: What's the Plan?!

- If you were born in 1990, at what age can you retire and receive the maximum Social Security benefits?
  - 59½
  - 60
  - 62
  - 65
  - 67
- If you were born in 1990 and retired at age 62, you:
  - Can collect the maximum Social Security benefits
  - Can collect half of the maximum Social Security benefits
  - Can collect Social Security benefits, but the benefits will be reduced by 30%
  - Will not be able to collect Social Security benefits
  - None of the above
- The retirement plan that provides a guaranteed, fixed amount of income in retirement is:
  - A defined benefit plan
  - A defined contribution plan
  - Both a defined benefit plan and a defined contribution plan
  - None of the above
- The retirement plan that allows you to determine the amount to contribute to the plan and how the money is invested is:
  - A defined benefit plan
  - A defined contribution plan
  - Both a defined benefit plan and a defined contribution plan
  - None of the above
- If you are less than 50 years of age, the maximum amount you can contribute to a 401(k) or 403(b) plan is:
  - \$16,500
  - \$22,000
  - \$37,500
  - There is no maximum; you can contribute as much as you want
  - None of the above
- If you are 50 years of age or older, the maximum amount you can contribute to a 401(k) or 403(b) plan is:
  - \$16,500
  - \$22,000
  - \$37,500
  - There is no maximum; you can contribute as much as you want
  - None of the above
- The plan that provides benefits based on a formula that includes the number of years you worked for your employer, the average of highest salaries, and your age when you retire is:
  - A defined benefit plan
  - A defined contribution plan
  - Both a defined benefit plan and a defined contribution plan
  - None of the above
- “Matching contributions” by an employer is characteristic of:
  - A defined benefit plan
  - A defined contribution plan
  - Both a defined benefit plan and a defined contribution plan
  - None of the above
- Vesting refers to:
  - The number of years an employee must work for the company in order to be eligible to receive a pension
  - The number of years an employee must work for the company in order to keep the matching contributions made to the plan by the employer
  - Both a and b
  - Neither a nor b
- Which retirement plan offers the most opportunity to accumulate a large sum of money and the greatest risk of losing money?
  - A defined benefit plan
  - A defined contribution plan
  - Both a defined benefit plan and a defined contribution plan
  - None of the above



## LESSON 3

### Activity 2: What's the Formula?!

Kristen has worked for Belle, Inc. for 35 years. Over the past five years, Kristen has earned a salary of \$80,000, \$75,000, \$70,000, \$65,000, and \$60,000, which are her highest salaries since she began working for the company.

Belle, Inc. provides employees a defined benefit plan based on 3% of the average of their five highest salaries and the number of years worked. Employees are vested in the plan if they have five years or more service with the company.

What is Kristen's annual pension if she decides to retire now?

### Activity 3: Me and My Money

Abby has been employed by Duker Company, which offers a defined contribution plan. Each year, her salary has been \$110,000 and she has contributed 15% of her salary to her retirement plan. Duker Company provides matching contributions to the plan equal to 50% of an employee's contribution, up to a maximum of 6% of the employee's salary. Employer contributions are vested with the employee after the employee works five years for the company. Abby has been employed with Duker Company for three years.

1. What amount does Abby contribute to her plan each year?
2. What amount does Duker Company contribute to Abby's plan each year?
3. What is the total amount contributed to Abby's plan thus far?
4. If Abby leaves Duker Company now to take another job, determine the amount from her defined contribution plan that she will be entitled to keep.



## Instructor's Solutions

### Lesson 1, Activity 1: Cliff's Wonderful Financial Adventure

Cliff has been out of school for five years now and he still hasn't managed to organize his personal finances so he can move out of his parent's house. Cliff is seeking your advice to develop a budget so he can save money and move out on his own. Cliff's gross income is \$54,000 a year and his income after taxes is \$3,500 per month.

Assume there are four weeks per month.

1. When you meet Cliff, you explain the "Pay Yourself First" strategy for saving and investing and Cliff agrees to use the strategy to prepare his budget. If Cliff uses the suggested guidelines for saving and investing, what amount will Cliff save and invest each month and what amount will remain for expenses?

**Save:**            **\$350** ( $\$3,500 \times 10\%$ )  
**Invest:**        **\$350** ( $\$3,500 \times 10\%$ )  
                      **\$700**

**Take-home income:**        **\$3,500**  
**Save and invest:**         **\$ 700**  
**Remaining to pay expenses** **\$2,800**

2. Based on suggested guidelines, what amount should Cliff budget each month for rent?

**Rent:** **\$900** ( $\$54,000/12 \text{ months} = \$4,500 \times 20\%$ )

3. Cliff is planning to buy a new sports car that will cost \$450 per month. The car insurance will cost Cliff \$3,600 per year and require monthly payments. What amount should Cliff budget each month for his new sports car and insurance?

**Car payment:**            **\$450**  
**Insurance:**            **\$300** ( $\$3,600/12 \text{ months}$ )  
                                  **\$750**

4. Cliff plans to spend \$100 a week on groceries and \$75 a week on gas for the car. What amount should Cliff budget each month for these expenses?

**Groceries:**    **\$400** ( $\$100 \times 4 \text{ weeks}$ )  
**Gas:**            **\$300** ( $\$75 \times 4 \text{ weeks}$ )  
                      **\$700**

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## SOLUTIONS

5. Based on Cliff's financial planning, what is his disposable income each month?

Take-home income:	\$3,500
Expenses:	
Saving:	\$350 (\$3,500 x 10%)
Invest:	\$350 (\$3,500 x 10%)
Rent:	\$900 (\$54,000/12 months = \$4,500 x 20%)
Car payment:	\$450
Insurance:	\$300 (\$3,600/12 months)
Groceries:	\$400 (\$100 x 4 weeks)
Gas:	<u>\$300</u> (\$75 x 4 weeks)
Total Expenses	<u>\$3,050</u>
Disposable Income	<u>\$450</u>

6. What expenses has Cliff not considered? Prepare a revised budget for Cliff that includes expenses he initially failed to consider to determine his revised disposable income.

**Most notably, Cliff has failed to budget for utilities, such as electricity, heat and hot water, cable and internet connections, and telephone expenses.**

*Ask students to provide an estimate of these expenses on a monthly basis, or provide the following estimates:*

<b>Utilities:</b>	<b>\$150</b>
<b>Cable:</b>	<b>\$100</b>
<b>Telephone:</b>	<b><u>\$100</u></b>
<b>Total</b>	<b><u>\$350</u></b>

Take-home income:	\$3,500
Expenses:	
Saving:	\$350 (\$3,500 x 10%)
Invest:	\$350 (\$3,500 x 10%)
Rent:	\$900 (\$54,000/12 months = \$4,500 x 20%)
Car payment:	\$450
Insurance:	\$300 (\$3,600/12 months)
Groceries:	\$400 (\$100 x 4 weeks)
Gas:	\$300 (\$75 x 4 weeks)
<b>Utilities:</b>	<b>\$150</b>
<b>Cable/Internet:</b>	<b>\$100</b>
<b>Telephone:</b>	<b><u>\$100</u></b>
Total Expenses:	<u>\$3,400</u>
Disposable Income:	<u>\$100</u>

7. If Cliff had planned to spend \$50 every other week to buy new clothes and \$50 a weekend to go out with his friends, will he be able to do so?

**No. Cliff has a monthly disposable income of \$100; however, spending \$50 on clothes every other week and \$50 a weekend will cost \$300 a month.**

Clothes:	\$100 (\$50 x 2 weeks)
Weekends:	<u>\$200</u> (\$50 x 4 weeks)
	<u>\$300</u>

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# SOLUTIONS

8. Based on Cliff's budget, what changes and adjustments should he consider in order to improve his financial position?

**Cliff should consider: (a) renting a less expensive apartment or finding a roommate to share the cost; (b) purchasing a less expensive car (or buying a used car or leasing a car) with lower monthly payments; and (c) determine how to reduce expenses for utilities, cable/internet, telephone, and gas.**

**Emphasize to students that Cliff should maintain his level of saving and investing and decrease his spending, rather than save and invest less. In particular, non-essential or discretionary expenses should be eliminated or reduced first, such as expenditures for new clothes and weekend entertainment.**

9. Which of Cliff's expenses are necessary or essential and which are discretionary or non-essential?

**Under the "Pay Yourself First" strategy, saving and investing is considered essential.**

Necessary or Essential Expenses

- Saving
- Investing
- Rent
- Car payment
- Insurance
- Groceries
- Utilities
- Cable/Internet\*
- Telephone
- Gas

Discretionary or Non-Essential Expenses

- Clothes\*
- Weekends

*\* Ask students to consider when cable/internet expenses might be discretionary or non-essential, and when the cost of clothes might be considered necessary or essential, i.e., clothes for business or work.*

## Lesson 1, Activity 2: Budgeting Your Money

Research indicates that single people, on average, spend their income as follows:

- Housing, 20%
- Transportation, 10-20%
- Clothes, 5-15%
- Food, 15-25%
- Entertainment, 5-10%
- Savings, 10%

For each of the categories listed above, indicate the percent of your income that you would spend on each item: **Responses will vary.**

- Housing \_\_\_\_\_%
- Transportation \_\_\_\_\_%
- Clothes \_\_\_\_\_%
- Food \_\_\_\_\_%
- Entertainment \_\_\_\_\_%
- Savings \_\_\_\_\_%



## Lesson 2, Activity 1: Another Day, Another Dollar – or 70¢ After Taxes!

Ray is single with no dependents and lives in Connecticut. In 2009, he earned \$125,000 working as a senior manager for a CPA firm.

1. What amount of Social Security tax and Medicare tax would be withheld from Ray's salary for the year?

**Social Security tax:** \$6,621.60 (\$106,800 x 6.2%)  
**Medicare tax:** \$1,812.50 (\$125,000 x 1.45%)  
\$8,434.10

2. What amount of Social Security tax and Medicare tax is paid by Ray's employer, the CPA firm, on his behalf?

**Social Security tax:** \$6,621.60 (\$106,800 x 6.2%)  
**Medicare tax:** \$1,812.50 (\$125,000 x 1.45%)  
\$8,434.10

3. What is Ray's gross income if he earned \$5,000 in interest and dividends from investments?

**\$130,000 = \$125,000 salary + \$5,000 interest and dividends**

4. How many exemptions can Ray claim and what amount can he deduct from his gross income based those exemptions?

**One (1) exemption, himself, \$3,650**

5. If Ray paid \$10,000 in interest on a mortgage, had \$6,000 of state income taxes withheld during the year, and gave charitable donations of \$3,000 during the year, what are his total itemized deductions and taxable income?

<b>Gross Income</b>	<b>\$130,000</b>
<b>Exemptions</b>	<b>\$ 3,650</b>
<b>Itemized Deductions:</b>	
<b>Mortgage Interest</b>	<b>\$ 10,000</b>
<b>CT State Income Taxes</b>	<b>\$ 6,000</b>
<b>Charitable Donations</b>	<b><u>\$ 3,000</u></b>
<b>Total Itemized Deductions</b>	<b><u>\$ 19,000</u></b>
<b>Taxable Income</b>	<b><u>\$107,350</u></b>

(continued on next page)



6. What is Ray's federal income tax?

**\$23,778 = \$16,750 + [(107,350 - \$82,250) x 28%]**

If your taxable income is between:	The tax rate is:	The tax is:
\$82,250 and \$171,550	28%	\$16,750, plus 28% of the amount between \$82,250 and \$171,550

Or

If your taxable income is between:	The tax rate is:	The tax is:
\$0 and \$8,350	10%	<b>\$ 835</b> (\$8,350 - \$0) = \$8,350 x 10%
\$8,350 and \$33,950	15%	<b>\$ 3,840</b> (\$33,950 - \$8,350) = \$25,600 x 15%
\$33,950 and \$82,250	25%	<b>\$12,075</b> (\$82,250 - \$33,950) = \$48,300 x 25%
\$82,250 and \$171,550	28%	<b>\$ 7,028</b> (\$107,350 - \$82,250) = \$25,100 x 28%
	<b>Total Tax</b>	<b>\$23,778</b>

7. If Ray had \$20,000 of federal taxes withheld during the year, determine whether Ray would owe additional taxes or be due a refund, and the amount.

**Tax due: \$3,778 (\$23,778 tax due; \$20,000 withheld)**

8. What is Ray's state income tax?

**\$6,300 = (\$10,000 x 3%) = [(\$130,000 - \$10,000) x 5%]**

9. Ray had \$6,000 of state taxes withheld during the year. Determine whether Ray would owe additional state taxes or be due a refund, and the amount.

**Tax due: \$300 (\$6,300 tax due; \$6,000 withheld)**

10. What is the total amount of taxes Ray will pay for the year?

**\$38,512.10**

<b>Federal tax:</b>	<b>\$23,778.00</b>
<b>State tax:</b>	<b>\$ 6,300.00</b>
<b>Social Security tax:</b>	<b>\$ 6,621.60</b>
<b>Medicare tax:</b>	<b>\$ 1,812.50</b>
<b>Total</b>	<b><u>\$38,512.10</u></b>

11. What percent of Ray's income is paid in taxes?

**29.62% (\$38,512.10/\$130,000)**

*(continued on next page)*



## SOLUTIONS

12. Based on Ray's federal income tax, state income tax, Social Security tax, and Medicare tax for the year, estimate the amount of each tax and the total tax that should be withheld each pay period if Ray is paid twice per month.

<b>Federal tax:</b>	<b>\$23,778 / 24 pay periods =</b>	<b>\$ 990.75</b>
<b>State tax:</b>	<b>\$6,300 / 24 pay periods =</b>	<b>\$ 262.50</b>
<b>Social Security tax:</b>	<b>\$6,621.60 / 24 pay periods =</b>	<b>\$ 275.90</b>
<b>Medicare tax:</b>	<b>\$1,812.50 / 24 pay periods =</b>	<b>\$ <u>75.52</u></b>
<b>Estimated tax withheld:</b>		<b><u>\$1,604.67</u></b>

13. Based on your estimate of the tax that should be withheld each pay period, estimate Ray's take-home pay.

<b>Gross pay per period:</b>	<b>\$5,208.33 (\$125,000 / 24 pay periods)</b>
<b>Withholding:</b>	<b><u>\$1,604.67</u></b>
<b>Estimated net pay:</b>	<b><u>\$3,603.66</u></b>



## Lesson 3, Activity 1: What's the Plan?!

1. If you were born in 1990, at what age can you retire and receive the maximum Social Security benefits?  
**e. 67**
2. If you were born in 1990 and retired at age 62, you:  
**c. Can collect social security benefits, but the benefits will be reduced by 30%**
3. The retirement plan that provides a guaranteed, fixed amount of income in retirement is:  
**a. A defined benefit plan**
4. The retirement plan that allows you to determine the amount to contribute to the plan and how the money is invested is:  
**b. A defined contribution plan**
5. If you are less than 50 years of age, the maximum amount you can contribute to a 401(k) or 403(b) plan is:  
**a. \$16,500**
6. If you are 50 years of age or older, the maximum amount you can contribute to a 401(k) or 403(b) plan is:  
**b. \$22,000**
7. The plan that provides benefits based on a formula that includes the number of years you worked for your employer, the average of highest salaries, and your age when you retire is:  
**a. A defined benefit plan**
8. "Matching contributions" by an employer is characteristic of:  
**b. A defined contribution plan**
9. Vesting refers to:  
**c. Both a and b**
10. Which retirement plan offers the most opportunity to accumulate a large sum of money and the greatest risk of losing money?  
**b. A defined contribution plan**



## Lesson 3, Activity 2: What's the Formula?!

Kristen has worked for Belle, Inc. for 35 years. Over the past five years, Kristen has earned a salary of \$80,000, \$75,000, \$70,000, \$65,000, and \$60,000, which are her highest salaries since she began working for the company.

Belle, Inc. provides employees a defined benefit plan based on 3% of the average of their five highest salaries and the number of years worked. Employees are vested in the plan if they have five years or more service with the company.

What is Kristen's annual pension if she decides to retire now?

$$\begin{aligned}\text{Annual pension} &= 3\% \times \text{Average of three highest salaries} \times \text{Number of years worked} \\ &= 3\% \times \$70,000^* \times 35 \text{ years} \\ &= \$73,500 \text{ per year}\end{aligned}$$

$$\begin{aligned}\text{*Average Salary} &= (\$80,000 + \$75,000 + \$70,000 + \$65,000 + \$60,000) / 5 \text{ years} \\ &= \$350,000 / 5 \text{ years} \\ &= \$70,000\end{aligned}$$



## Lesson 3, Activity 3: Me and My Money

Abby has been employed by Duker Company, which offers a defined contribution plan. Each year, her salary has been \$110,000 and she has contributed 15% of her salary to her retirement plan. Duker Company provides matching contributions to the plan equal to 50% of an employee’s contribution, up to a maximum of 6% of the employee’s salary. Employer contributions are vested with the employee after the employee works five years for the company. Abby has been employed with Duker Company for three years.

1. What amount does Abby contribute to her plan each year?

**\$16,500 = \$110,000 x 15%**

2. What amount does Duker Company contribute to Abby’s plan each year?

**\$6,600. Duker Company provides matching contributions equal to 50% of an employee’s contributions, subject to a limit of 6% of the employee’s salary. Fifty-percent of Abby’s contribution is \$8,250 (\$16,500 x 50%); however, that amount exceeds the maximum of 6% of her salary, or \$6,600 (\$110,000 x 6%). Therefore, Duker will provide a \$6,600 matching contribution.**

3. What is the total amount contributed to Abby’s plan thus far?

<b>Abby’s contribution per year:</b>	<b>\$16,500</b>
<b>Duker Company’s contribution per year:</b>	<b>\$ 6,600</b>
<b>Total per year</b>	<b>\$23,100</b>
<b>Number of years</b>	<b>3</b>
<b>Total</b>	<b><u>\$69,300</u></b>

4. If Abby leaves Duker Company now to take another job, determine the amount from her defined contribution plan that she will be entitled to keep.

**Employer contributions are vested with the employee after five years; therefore, Duker Company’s matching contributions to Abby’s plan are not vested with her if she leaves after working for the company for three years. Abby will be entitled to keep her contributions only:**

<b>Abby’s contribution per year:</b>	<b>\$16,500</b>
<b>Number of years</b>	<b>3</b>
<b>Total</b>	<b><u>\$49,500</u></b>