

# All Grown Up – No More Spring Breaks: Making My Money Grow (D3)

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**Course/Grade(s)**

Personal Finance/9-12

**Module:**

All Grown Up – No More Spring Breaks

**Lesson Title:**

Making My Money Grow (D3)

**Duration:**

6 - 45 minute classes

**Materials/Resources/Technology:**

Budget from Module C-1

Student Activity Sheet D3-A

Student Activity Sheet D3-B

Student Activity Sheet D3-C

Student Activity Sheet D3-D

Student Activity Sheet D3-E

Student Activity Sheet D3-F

Flip Chart or Whiteboard

Paper

Computer/Internet Access

[http://www.nytimes.com/2012/07/22/opinion/sunday/our-ridiculous-approach-to-retirement.html?\\_r=0](http://www.nytimes.com/2012/07/22/opinion/sunday/our-ridiculous-approach-to-retirement.html?_r=0)

[http://www.pbs.org/wgbh/commandingheights/hl/story/ch\\_f01\\_04.html](http://www.pbs.org/wgbh/commandingheights/hl/story/ch_f01_04.html)

<http://www.bankrate.com/calculators/savings/compound-interest-calculator-tool.aspx>

<http://www.youtube.com/user/nysetv1>

Yahoo Finance “3 Sectors to Play in the Coming U.S. Manufacturing Boom”

<http://finance.yahoo.com/blogs/breakout/3-sectors-to-play-in-the-coming-u-s--manufacturing-boom-143209688.html>

[http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm)

<http://www.calculatorsoup.com/calculators/financial/present-value-investment-calculator.php>

<http://finance.yahoo.com/>

<http://www.humanmetrics.com/rot/rotqd.asp>

American Century Investments Legacy Multiple Cap Fund Investor Class

<https://fundresearch.fidelity.com/mutual-funds/composition/02507H882>

Green Century Equity Fund

<http://greencentury.com/our-funds/equity-fund/>



### Classroom Arrangement:

No special classroom arrangement will be needed for this lesson.

### Content Background:

Stocks represent partial ownership in a company. Ownership of common stock provides the holder with voting rights, assuming large holdings, during shareholders' meetings. Ownership of preferred stocks does not provide voting rights but rather the privilege of being in the first round of disbursements of dividends.

Bonds represent a loan to a company, municipality, or federal government. Peace, war, and disasters all affect the price of bonds on the secondary market and the interest paid on a bond is typically associated with the risk associated with the bond (term and credit rating) as well as the tax treatment of the bond.

Mutual funds are the companies that pool money from investors and invest the money in a portfolio of securities such as stocks and bonds. The primary reason for investing in a mutual fund is to diversify risk in hopes of minimizing loss should at least one of the securities drop in value. Green mutual funds are a new trend in which companies create portfolios of stocks from companies that are working to be environmentally friendly. Index funds are mutual funds based on some of the stock markets' major indexes such as the Dow Jones Industrial Average and equity funds are those that only invest in stocks.

Inflation is a general rise in overall prices. Not all inflation is bad. Planned inflation is necessary for an economy to grow. A problem begins when countries experience unplanned (greater than was planned) inflation or worse yet, hyperinflation like Germany experienced in the early 1900's and that countries such as Zimbabwe are experiencing now.

The Rule of 72 provides a quick way to determine the number of years, at a given interest rate ( $i$ ), it takes for the total amount of money to double. The formula is " $72/i = \text{number of years to double.}$ " This quick calculation provides very similar results as a compounding interest formula [ $A = P(1 + r/n)^{nt}$  where  $A = \text{amount of money accumulated after } n \text{ years, including interest; } P = \text{principal amount initially deposited; } r = \text{annual rate of interest as a decimal; } n = \text{number of times the interest; } t = \text{number of years the amount is deposited}].$

### Standards:

National Jump\$tart: Saving and Investing: Standard 2 – Explain how investing builds wealth and helps meet financial goals.

National Jump\$tart: Saving and Investing: Standard 3 – Evaluate investment alternatives.

National Jump\$tart: Saving and Investing: Standard 4 – Describe how to buy and sell investments.

Tennessee Personal Finance: Standard 16 – Explain how saving and investing contribute to financial well-being, building wealth, and helping meet personal financial goals. Compare and contrast saving and investing strategies, such as certificates of deposit, stocks, bonds, mutual funds, and employer sponsored savings plans. Design a diversified saving and investment plan that includes strategies

## College GP\$: Goals, Problems, and Solutions

compatible with personal goals. Include time value of money and compound interest calculations in analysis.

### Day 1

#### Learning Targets/Objectives:

Students will define basic vocabulary needed to understand saving and investing.

#### Activating Strategy:

Provide students with the article “Our Ridiculous Approach to Retirement” ([http://www.nytimes.com/2012/07/22/opinion/sunday/our-ridiculous-approach-to-retirement.html?\\_r=0](http://www.nytimes.com/2012/07/22/opinion/sunday/our-ridiculous-approach-to-retirement.html?_r=0)). After they have read the article, ask students to share the amount of money they put aside for saving and/or investing when they created their budget in Module C.

#### Instruction:

Provide students with Student Activity Sheet D3-A so that they may record the definitions of stocks, common stocks, preferred stocks, blue chip stocks, and bonds. Explain to students that peace, war, and disasters all affect the price of bonds on the secondary market and that the interest paid on a bond is typically associated with the risk associated with the bond (term and credit rating) as well as the tax treatment of the bond.

Explain to the students that mutual funds are the companies that pool money from investors and invest the money in a portfolio of securities such as stocks and bonds. The primary reason for investing in a mutual fund is to diversify risk in hopes of minimizing loss should at least one of the securities drop in value. Tell students the green mutual funds are a new trend in which companies create portfolios of stocks from companies that are working to be environmentally friendly. Index funds are mutual funds based on some of the stock markets’ major indexes such as the Dow Jones Industrial Average and equity funds are those that only invest in stocks.

#### Modifications/Grouping:

Students with learning disabilities or cultural differences may need help understanding and recording the vocabulary definitions. Advanced students may be provided with articles about investing to read. The instructor will determine additional modifications/grouping required for each class.

#### Assessment/Evaluation/Closure:

Students will review their notes on Student Activity Sheet D3-A. Ask them to name three different companies that might sell stock. Typically, student answers will include the larger blue chip companies such as Walmart, McDonald’s, Gap, etc. Have a student volunteer list all of the company names on a flip chart or whiteboard. Students will submit Student Activity Sheet D3-A for a formative grade. Inform the students that during the next class, they will explore the concepts of inflation and the present value of money.

Reflect on the students’ questions/feedback, activating strategy, and instruction and make notes for future instruction. Did students attain the learning targets at an acceptable level? Were special needs students adequately accommodated?

### Day 2

#### Learning Targets/Objectives:

Students will examine how inflation decreases the purchasing power of money.

#### Activating Strategy:

Show the *Commanding Heights* video on German hyperinflation ([http://www.pbs.org/wgbh/commandingheights/hi/story/ch\\_f01\\_04.html](http://www.pbs.org/wgbh/commandingheights/hi/story/ch_f01_04.html)). After students view the video, ask them to share their observations regarding the cost of simple day-to-day items such as bread, firewood, etc.

#### Instruction:

After completing the activating strategy explain to the students that not all inflation is bad. Planned inflation is necessary for an economy to grow. The problem begins when countries experience unplanned (greater than was planned) inflation or worse yet, hyperinflation like Germany experienced in the early 1900's and that countries such as Zimbabwe are experiencing now.

Provide the students with Student Activity Sheet D3-B. Show the students the inflation calculator on the Bureau of Labor Statistics website ([http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm)). Explain to the students that the growth in price represented by the calculator is only the growth of the value of the money. The growth does not reflect a change in quality or the quantity of a "package" of something (e.g. a container of ice cream was eight cups, now it is only six).

#### Modifications/Grouping:

Students with learning disabilities or cultural differences may need assistance with the math used during the lesson. Advanced students should complete additional problems and examine the similarities between the results of the Rule of 72 calculation and the compounding interest calculation. The instructor will determine additional modifications/grouping required for each class.

#### Assessment/Evaluation/Closure:

Provide the students with the following scenario: You are saving for a prom dress/tuxedo for next year's prom. The cost is \$360 and you are saving \$30/month in a drawer. If inflation is anticipated to be 2%, what will be the result (assuming no taxes) when you go to the store to purchase the dress/tuxedo? Will you have enough money? If not, how much will you lack? (The correct response will be that they will need an additional \$7.20 to purchase the dress/tuxedo.)

Have students submit Student Activity Sheet D3-B for a formative grade. Tell students that during the next class, they will complete compounding interest calculations and discover the reasoning behind the present value of money calculations.

Reflect on the students' questions/feedback, activating strategy, and instruction and make notes for future instruction. Did students attain the learning targets at an acceptable level? Were special needs students adequately accommodated?

### Day 3

#### Learning Targets/Objectives:

Students will calculate investments using the Rule of 72 to determine how long it would take their investment to double.

Students will calculate the present value of money.

#### Activating Strategy:

Show the students a compounding interest calculator (e.g. <http://www.bankrate.com/calculators/savings/compound-interest-calculator-tool.aspx>). Keeping the initial input and interest rate constant, change the number of years from 10 to 20 to 30. Ask the students to interpret what is happening in three sentences.

#### Instruction:

The Rule of 72 provides a quick way to determine the number of years, at a given interest rate, it takes for the total amount of money to double. Write the formula “ $72/i = \text{number of years to double}$ ” on the board. Explain to the students that this quick calculation provides very similar results as a compounding interest formula [ $A = P(1 + r/n)^{nt}$  where  $A = \text{amount of money accumulated after } n \text{ years, including interest; } P = \text{principal amount initially deposited; } r = \text{annual rate of interest as a decimal; } n = \text{number of times the interest; } t = \text{number of years the amount is deposited}$ ].

Provide the students with Student Activity Sheet D3-C. The top part of the activity sheet provides students with practice problems for the Rule of 72. Have them complete the problems and compare their answers with another student.

After students have completed their Rule of 72 practice problems, ask them if they have ever heard on the news where a Powerball® or MegaMillions® winner is reported to take the lump sum payment. Do they know why that amount is so much less than the amount that the winning ticket was worth? Explain that the gross sum of money is what would be collected over a 20 years of payments; but rather than collecting payments every month for 20 years, the winner has chosen to collect the present value of the winnings. The present value of future dollars is calculated by using a fixed interest rate that might reasonably and safely be earned over the 20 year time horizon (approximately 5% right now).

Provide the students the URL to a present value calculator such <http://www.calculatorsoup.com/calculators/financial/present-value-investment-calculator.php>. Have students input the amounts provided at the bottom of Student Activity Sheet D3-C and then fill in the present value of the future sum on the activity sheet.

#### Modifications/Grouping:

Students with learning disabilities or cultural differences may need assistance with the math and/or calculator used during the lesson. Advanced students should complete additional problems. The instructor will determine additional modifications/grouping required for each class.

### **Assessment/Evaluation/Closure:**

Ask students to share their calculations from Student Activity Sheet D3-C with a partner so they can check their math and conclusions. Collect Student Activity Sheet D3-C for a formative grade. Tell the students that during the next class they will analyze the basic elements of a company's stock report.

Reflect on the students' questions/feedback, activating strategy, and instruction and make notes for future instruction. Did students attain the learning targets at an acceptable level? Were special needs students adequately accommodated?

### **Day 4**

#### **Learning Targets/Objectives:**

Students will evaluate the performance of three stocks in comparison to two major stock indexes and each other.

#### **Activating Strategy:**

Show the video of the opening bell of the New York Stock Exchange (<http://www.youtube.com/user/nysetv1>). Ask students who they believe sets the price of stocks traded on the exchange. Facilitate a brief discussion.

#### **Instruction:**

After completing the activating strategy and discussing the way markets (buyers and suppliers) set the price of a company's stock, provide the students with Student Activity Sheet D3-D. Organize students in groups of three and have them brainstorm a list of ten companies in which they would like to invest. Now have students research the companies on Yahoo! Finance (<http://finance.yahoo.com/>). Specifically, instruct them to examine the companies' 52-week price range and beta scores to determine the growth potential for the companies. Once they have completed that task, have them narrow the list to three companies.

Once they have narrowed their list to three companies, have them graph the three companies on Yahoo! Finance comparing the companies on a three-month chart along with at least one of the available indexes (Dow Jones, NASDAQ, or S&P 500). Student Activity Sheet D3-D provides students with a place to describe the market activity for the companies and their chosen index.

#### **Modifications/Grouping:**

Students with learning disabilities or cultural differences may need to be assigned fewer stocks. Advanced students should be assigned additional stocks or instructed to select their stocks from a specific sector of the market. The instructor will determine additional modifications/grouping required for each class.

### **Assessment/Evaluation/Closure:**

Poll teams as to whether or not their three chosen companies generally outperformed their chosen market index during the three month time period that they graphed. Collect Student Activity Sheet D3-D for a formative grade. Tell students that during the next two classes they will be applying what they learned about stocks, bonds, mutual funds, and interest rates, inflation, and compounding interest to create of a personalized mutual fund portfolio. Instruct the students to spend the time between today and the next class thinking about what kind of risk taker they perceive themselves to be.

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Reflect on the students' questions/feedback, activating strategy, and instruction and make notes for future instruction. Did students attain the learning targets at an acceptable level? Were special needs students adequately accommodated?

### Day 5

#### Learning Targets/Objectives:

Students will assess their level of risk tolerance.

Students will research and create their own mutual fund portfolio.

#### Activating Strategy:

Have the students decide what kind of risk taker they see themselves as on a scale of 1-10 with 1=Low Risk Taker and 10=High Risk Taker. Ask them to write two-three sentences explaining their self-assessment. Poll the class and create a bar chart or scatter gram representing the overall risk assessment number for the class.

#### Instruction:

After completing the activating strategy in which the class self-assessed their personal risk levels, have the students access the Humanmetrics Risk Attitudes Profiler™ (<http://www.humanmetrics.com/rot/rotqd.asp>). Note: Be sure they access the "Demo" version that is free of charge. Once the students have completed the risk assessment provide the students with Student Activity Sheet D3-E where they will record their results. Explain that they can use this information to guide their decisions as they begin to create a mutual fund. Students with high tolerance for risk might consider investing in riskier stocks (newer, smaller companies) whereas students with low levels of risk might consider only investing in blue chip stocks (large, stable companies).

Organize students into groups of four. You might consider matching them by risk level but this is not absolutely essential. Groups with a variety of risk tolerances will just need to negotiate more. Explain to students that they have \$1 million to create a mutual fund – a portfolio of 20 stocks (and bonds if you have more advanced students) for the purpose of this exercise - that they think will work to grow their money into their retirement years.

Show students examples of mutual fund portfolios (e.g. American Century Investments Legacy Multiple Cap Fund Investor Class, <https://fundresearch.fidelity.com/mutual-funds/composition/02507H882>, or Green Century Equity Fund, <http://grencentury.com/our-funds/equity-fund/>).

Have the teams brainstorm and begin researching the price and sector for each company and record their information on Student Activity Sheet D3-E.

#### Modifications/Grouping:

Students with learning disabilities or cultural differences may need to research fewer stocks in their portfolio and a lower dollar amount to spend. Advanced students should be assigned additional stocks or bonds to include in their mutual funds. The instructor will determine additional modifications/grouping required for each class.

### **Assessment/Evaluation/Closure:**

Poll students and create a bar chart on the board with the results of their risk tolerance. Ask if any of the students were surprised by the results of their risk tolerance assessment. Ask the students to share what they learned about their risk tolerance. Poll the class to determine how much of the day's assignment they completed. Adjust for another day if that time is needed. Tell students that during the next class period they will be completing their mutual fund portfolio.

Reflect on the students' questions/feedback, activating strategy, and instruction and make notes for future instruction. Did students attain the learning targets at an acceptable level? Were special needs students adequately accommodated?

### **Day 6**

#### **Learning Targets/Objectives:**

Students will complete their mutual fund and justify the stocks they chose to include.

#### **Activating Strategy:**

Show the students the *Breakout* video on Yahoo Finance "3 Sectors to Play in the Coming U.S. Manufacturing Boom" (<http://finance.yahoo.com/blogs/breakout/3-sectors-to-play-in-the-coming-u-s--manufacturing-boom-143209688.html>). Ask students to share if they chose a particular sector on which to focus their mutual fund and to explain why they chose that (those) sector(s).

#### **Instruction:**

Provide students with Student Activity Sheet D3-F. Instruct students to name their mutual fund and complete the project by narrowing their choices to 20 companies and spending the entirety of their \$1 million. Have students list their top holdings in the table provided on the activity sheet. Finally, have students write a paragraph describing their mutual fund portfolio.

#### **Modifications/Grouping:**

Students with learning disabilities or cultural differences may need to be provided with more cues to complete the assignment. Provide them with copies of other mutual fund portfolios and have them research the prices for each company. Advanced students should complete a more thorough description of their portfolio composition or they should create an additional portfolio based on a singular sector. The instructor will determine additional modifications/grouping required for each class.

### **Assessment/Evaluation/Closure:**

On an exit ticket, have the students summarize three things they learned while building their mutual fund. Collect Student Activity Sheet D3-E and Student Activity Sheet D3-F for formative grades. Inform the students that they are coming to the end of their personal finance journey this semester and that during the next class meetings, they will be revisiting their original "Dreaming" essay and revising their dreams to reflect their chosen post-secondary and career path and their current plan for saving and investing for the future.

Reflect on the students' questions/feedback, activating strategy, and instruction and make notes for future instruction. Did students attain the learning targets at an acceptable level? Were special needs students adequately accommodated?

## All Grown Up – No More Spring Breaks: Making My Money Grow (D3)

### Student Activity Sheet D3-A

Student Name: \_\_\_\_\_ Period: \_\_\_\_\_

Stocks are

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Common stock is

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Preferred stock is

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Blue chip stocks are

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Bonds are

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Things that affect bond prices include

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Things that affect the interest paid on the bond

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Mutual funds are \_\_\_\_\_

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The primary reason for investing in an mutual fund rather than individual stocks or bonds \_\_\_\_\_

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Mutual fund portfolios come in a wide variety of compositions.

Green mutual funds are \_\_\_\_\_

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Index funds are \_\_\_\_\_

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Equity funds are \_\_\_\_\_

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## All Grown Up – No More Spring Break: Making My Money Grow (D3)

## All Grown Up – No More Spring Breaks: Making My Money Grow Student Activity Sheet D3-B

Student Name: \_\_\_\_\_ Period: \_\_\_\_\_

Go to [http://www.bls.gov/data/inflation\\_calculator.htm](http://www.bls.gov/data/inflation_calculator.htm) and enter the price and year to determine the equivalent cost in 2014.

| Item                   | 1962 Price | Information That May Affect Price             | 2014 Price |
|------------------------|------------|---|------------|
| Chewing Gum - pack     | \$0.05     | Five Sticks Per Pack in 1962                  |            |
| Candy Bar              | \$0.05     | Larger Serving Today                          |            |
| Refrigerator           | \$500      |   |            |
| 1 lb. Hamburger        | \$0.35     |   |            |
| Record Album           | \$3.00     |   |            |
| Gallon of Gas          | \$0.31     |   |            |
| First Class Postage    | \$0.04     | First Class Now Goes Via Air Mail             |            |
| Pay Phone - local call | \$0.10     | Long Distance Rates Are Less Expensive Today. |            |
| Newspaper              | \$0.10     |   |            |
| Soft Drink             | \$0.10     | Much Larger Serving Today                     |            |
| Doctor's Office Visit  | \$5        | Doctors Usually Spent Much More Time          |            |
| New Home               | \$15,000   | New Houses are Generally Larger Today         |            |
| New Car                | \$2,500    | Additional Standard Features Today            |            |
| Median Family Income   | \$6,000    |   |            |
| Minimum Hourly Wage    | \$1.25     |   |            |
| Movie Ticket           | \$0.50     |   |            |
| Color Television       | \$400      | No Remote Control in 1962 or 1972             |            |
| Popcorn at the Movie   | \$0.20     | Much Larger Serving Today                     |            |
| Loaf of Bread          | \$0.20     |   |            |

What items cost less now (in today's dollars) than you would expect? Why? (e.g. In 2014 dollars a refrigerator would cost \$3,939 but in reality they costs less. How might this be explained?)

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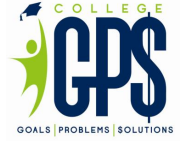
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**My Financial Plan For Education: Making My Money Grow  
Student Activity Sheet D3-C**

Student Name: \_\_\_\_\_ Period: \_\_\_\_\_

**Rule of 72 → Number of Years to Double =  $72/i$  where “i” is the Interest Rate**

If you are given \$500 and invest it at an interest rate of 12%, how long will it take for your initial \$500 to be worth \$4,000?

If you are given \$500 and invest it at an interest rate of 6%, how long will it take for your initial \$500 to be worth \$4,000?

If you are given \$500 and invest it at an interest rate of 3%, how long will it take for your initial \$500 to be worth \$4,000?

If you are given \$500 and invest it at an interest rate of 2%, how long will it take for your initial \$500 to be worth \$4,000?

If you are given \$500 and invest it at an interest rate of 1%, how long will it take for your initial \$500 to be worth \$4,000?

Explain the difference in time needed to grow your money based upon the interest rate and your answers from the problems provided above.

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**Present value of the future sum (input the following information into an online calculator such as the one located at <http://www.calculatorsoup.com/calculators/financial/present-value-investment-calculator.php> to determine the present value of the future sum.**

**1.** FV = \$10,000,000

t = 20

R = 5.25

m = 12

PV = \_\_\_\_\_

**2.** FV = \$10,000,000

t = 20

R = 8.00

m = 12

PV = \_\_\_\_\_

**3.** FV = \$10,000,000

t = 20

R = 10.00

m = 12

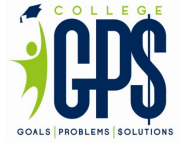
PV = \_\_\_\_\_

What observation can you make regarding the effects of the changing interest rate? \_\_\_\_\_

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**My Financial Plan For Education: Making My Money Grow  
Student Activity Sheet D3-D**

Student Name: \_\_\_\_\_ Period: \_\_\_\_\_

List ten companies about which your team would like to learn.

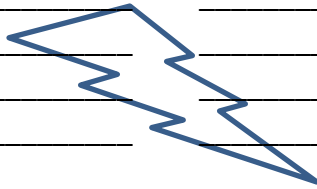
\_\_\_\_\_

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\_\_\_\_\_



Go to [www.finance.yahoo.com](http://www.finance.yahoo.com) and look up each of the companies that you selected. After examining their 52-week performance, the stocks' beta scores, etc., narrow your list to three companies.

| Company | Ticker Symbol | 52-week range | Beta Score |
|---------|---------------|---------------|------------|
|         |               |               |            |
|         |               |               |            |
|         |               |               |            |

On one of the company's (from above) pages on Yahoo! Finance click on the chart and then select "Compare" and enter the other two companies and select Dow Jones or NASDAQ or S&P 500. Then select "Draw." Describe the graph that was drawn. If you examine the three month chart, which company, or index, has had the greater increase in value? Which has had the greater decrease in value? How have your three stocks performed in relationship to the stock index(es) you chose?

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