



Upcoming Meeting Dates

Brown Bag Luncheon Agenda – 1/16/2014

Policy Committee Draft Meeting Minutes – 1/6/2014

Capital Non-Recurring Proposed Projects 2014-2014 Memo

*\*Response to December 10, 2013 Questions*

Response to Questions Regarding the Business Curriculum – 1/10/2014

Osborn Hill Building Committee Draft Minutes – 12/19/2013



## *MEETING DATES*

### UPCOMING MEETING DATES

|                          |  |
|--------------------------|--|
| January 14               | 7:30 PM – Board of Education Meeting<br>Regular Meeting<br>501 Kings Highway East<br>2 <sup>nd</sup> Floor Board Conference Room         |
| January 16               | 12:00 PM – Superintendent's Brown Bag Luncheon<br>501 Kings Highway East<br>2 <sup>nd</sup> Floor Board Conference Room                  |
| January 21               | 7:30 PM – Board of Education Meeting<br>Special Meeting/Budget<br>501 Kings Highway East<br>2 <sup>nd</sup> Floor Board Conference Room  |
| January 28               | 7:30 PM – Board of Education Meeting<br>Special Meeting/Budget<br>501 Kings Highway East<br>2 <sup>nd</sup> Floor Board Conference Room  |
| January 30<br>(Thursday) | 7:30 PM – Board of Education Meeting<br>Regular/Budget Adoption<br>501 Kings Highway East<br>2 <sup>nd</sup> Floor Board Conference Room |

Board of Education, Fairfield Public Schools  
501 Kings Highway East, 2<sup>nd</sup> Floor Board Conference Room, Fairfield, CT

Thursday, January 16, 2014

**Brown Bag Luncheon**

**12:00 P.M.**

1. Welcome and Introductions
2. Discussion of Superintendent's Recommended 2014-2015 Budget
3. Question and Answer Session
4. Adjournment

BOARD OF EDUCATION  
Fairfield Public Schools  
501 Kings Highway East, Suite 210, Fairfield, CT  
**Policy Committee Meeting Minutes**  
Monday, January 6, 2014

- I. Call to Order  
The meeting was called to order at 4:31. Those in attendance were Jennifer Kennelly, John Convertito, Donna Karnal, ex-officio committee member, Paul Fattibene, and Karen Parks, representing the administration.
- II. Election of Chairperson for Committee  
Donna Karnal nominated Jennifer Kennelly, seconded by John Convertito. Motion passed 3:0:0.
- III. Set Meeting Dates:  
Meeting dates approved for 2014 as follows: Monday, January 6; Monday, February 10 TO START EARLY AT 3:30; Monday, March 3; Monday, March 31; Monday, April 28; Monday, May 12; Monday, June 2; Monday, June 16; Monday, August 25; TUESDAY, September 2 (Monday is Labor Day); Monday, September 15; Monday, October 13; Monday, November 17; Monday, December 1.  
Vote of 3:0:0
- IV. Approval of Minutes – deferred until next meeting.
- V. Policy
- Fairfield Public Schools Mission and Goals – Continued discussion and recommended edits; Policies 0100, 0110, 0200 forwarded to BOE for first read on Tuesday, January 14, 2014.
  - Policy #5519 Students – Wellness remained in committee for further discussion.
- VI. Open Discussion/Public Comment – None.
- VII. Adjournment – Meeting adjourned at 5:45.
- VIII. Future Items:
- Policy #5515 Students – Protocol for Emergency Medications, Epinephrine
  - Policy #4240 Personnel – Electronic Mail
  - Policy #3552 Business – Lending School Owned Equipment
  - Policy #5340 Students – Lost/Damaged Equipment
  - Policy #4110 Personnel – Recruitment and Selection
  - Policy #5542 Students – On Campus Recruitment
  - Policy #6511 Instruction – Special Education

Future Mtg. Dates and Times: Monday, February 10 TO START EARLY AT 3:30; Monday, March 3; Monday, March 31; Monday, April 28; Monday, May 12; Monday, June 2; Monday, June 16; Monday, August 25; TUESDAY, September 2 (Monday is Labor Day); Monday, September 15; Monday, October 13; Monday, November 17; Monday, December 1, 2014.

**Fairfield Public Schools**  
Fairfield, CT 06825

**TO:** Dr. David Title and Members of the Board of Education  
**FROM:** Thomas P. Cullen  
**DATE:** January 9, 2014  
**RE:** Capital Non-Recurring Proposed Projects 2014-2015

I am writing to provide you with answers to questions from the BOE meeting of December 10, 2013 related to the Proposed Capital Non-Recurring Projects for 2014-2015.

Board members asked two questions requiring follow-up:

1. Dwight Elementary School savings recognized from the recent new boiler replacement?

***Answer***

*We reviewed the utilities bills for Dwight School and can confirm a savings of approximately 23%, \$25,754.*

2. The payback period on the boilers proposed for North Stratfield Elementary School based on the efficiency differential and the average burn?

***Answer***

*Savings from boiler upgrades/replacements are not always consistent because the scope of one boiler replacement may be different than another. Typically the utility savings can be expected to be in the 20% to 25% range.*

*Using the historical utilities savings seen at Dwight School the 'payback due to utility cost savings' for the North Stratfield boiler replacement would be as follows:*

*Average gas & electric cost (three year average) is \$117,355.*

*23% of \$117,355 = \$26,991*

*Project cost = \$364,652*

*Payback = \$364,652 / \$26,991 = 13.51 years*

If you have any questions or concerns regarding this information, please feel free to contact me at (203) 255-8373.

Thank you.

c: Central Office Administrators  
Meg Brown

**Margaret Boice, Ed.D.**  
Director of Secondary Education



**Fairfield Public Schools**  
501 Kings Highway East, Suite 210  
Fairfield, Connecticut 06825  
Phone: (203) 255-8390  
FAX: (203) 255-8273

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TO: Dr. David Title  
FROM: Dr. Margaret Boice  
DATE: January 10, 2014  
RE: Response to questions regarding the Business curriculum

The following lists the questions asked at the December 10 Board meeting and my response to each.

1. *What is the enrollment history for each course by school?*  
Please see attachment #1.
2. *Please load the PowerPoint of the curriculum presentation on the website.*  
The PowerPoint is here: [http://fairfieldschools.org/curriculum\\_instruction\\_business.htm](http://fairfieldschools.org/curriculum_instruction_business.htm)
3. *What is the impact on FTE's?*  
The high schools run courses based on student request and available FTE's. No additional FTE's will be hired.
4. *Please provide a ranking of students' choices on business electives.*  
Students rank order their elective choices as 1, 2 or 3. We do not have data that indicates which courses correlate to rankings of 1, rankings of 2 and rankings of 3.
5. *What courses would be dropped if two new courses were added and FTE's remained the same?*  
All of the courses would be available for students' selection. Courses would be run that have the greatest number of student requests and fall within the total number of FTE in the Business department.
6. *What are the prerequisites for the various courses?*  
Please see attachment #2.
7. *Can you provide sample materials [for the new course Introduction to Investing and Finance]?*  
Please see attachment #3.
8. *Can you provide a list of textbooks that were also considered [for the new course Financial Literacy]?*

Title: Managing your Personal Literacy  
Author: Joan S. Ryan  
Copyright: 2010  
Publisher: Cengage  
Cost: \$80



Title: 100% Financial Literacy  
Author: Gwenn Wilson  
Copyright: 2013  
Publisher: Cengage  
Cost: \$40

8. *Could you please provide a list of text books that correspond with each of the Business Courses that require approval at the upcoming BOE meeting? In reviewing the course descriptions further, I noticed that specific titles were not provided for the majority of courses.*

The title of the primary textbook is included in the implementation guide, which is written after the curriculum is approved by the Board. A list of Business courses with textbook is attached. Please see attachment #4.

9. *Why are we spending 4 weeks on Adobe Flash? Due to Apple's unwillingness to support Flash on its iDevices, Flash for mobile is effectively dead. Adobe announced that it would stop new installations of its Flash Player on Android devices back in 2012. Flash's market share has dropped to only 15.7% of websites (<http://w3techs.com>). I understand that the district utilizes the Adobe Web Development Suite, but are there other alternatives that were considered, such as JavaScript which is used by 88.5% of all websites (<http://w3techs.com>)?*

We still include it because many developers still use it, Adobe still supports it and it is still appropriate for high school students in this introductory course. However, we have amended the curriculum document CIS Web Design, Unit 4, to allow our teachers the option of using Flash, HTML5 or Javascript, depending upon the needs and experience level of the students. The amended document is attached.

A recent article stated this: "Taking all this in consideration it is safe to say that the days of Flash websites are over. It is a market where Javascript, HTML5 and CSS3 can deliver great results. But Flash is far from dead. It is still the go to platform for video streaming and Digital Rights Management, native app development for mobile devices and console grade gaming for desktop browsers." (For the full article: <http://www.academyclassblog.co.uk/the-future-of-flash-part-i-flash-on-the-web/>)

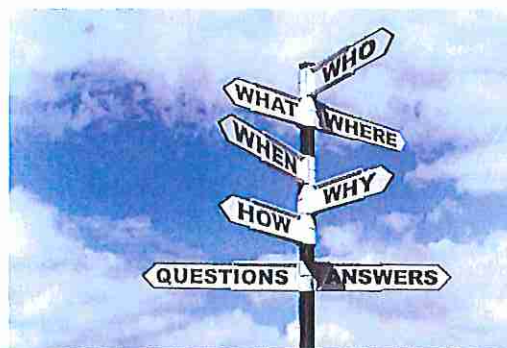




| Course                                | Prerequisite  |
|---------------------------------------|---|
|                                       |   |
| Accounting                            | None  |
| Introduction to Business              | None  |
| Business and Personal Law             | None  |
| Business Management and Leadership    | None  |
| Business of Sports and Entertainment  | None  |
| Internship and Career Exploration     | None  |
| Games Design and Programming          | Algebra 12 (B or better)  |
| Computer Information Systems          | None  |
| CIS Web Design                        | None  |
| Entrepreneurship                      | None  |
| Marketing                             | None  |
| Advanced Advertising Design           | Taken and passed at least one of the following: Marketing, Business of Sports and Entertainment, Entrepreneurship   |
| AP Computer Science                   | Computer Games Design and Programming, teacher recommendation   |
| AP Economics – Micro and Macro        | Teacher recommendation  |
| Robotics Programming                  | Algebra 12 (C or better)  |
| Financial Literacy                    | None  |
| Introduction to Investing and Finance | Completion of Algebra 12 and one of the following courses: Accounting, Business Management, Business of Sports and Entertainment, Entrepreneurship, Marketing |

# Know Thyself: How Your Needs Will Steer Your Decisions

## Step 1: What Do I Need to Consider Before Investing?



There are four basic aspects that compose your personal investment profile:

- Your personal tolerance for risk
- Your return needs and whether you need to emphasize current income or future growth
- Your time horizon
- Your tax exposure

Each aspect of your personal investment profile will affect the trade-offs you are willing to make and your ability to reduce risk.

## Step 2: How Do I Know How Much Risk I Can Handle?

The amount of risk you are willing to take is an extremely important factor to consider before making an investment because of the severe consequences of taking on too much risk. Risk is uncertainty—the possibility that the investment won't perform as expected. Most investors who take on too much risk panic when confronted with losses they are unprepared for, and they frequently bail out at the worst possible time. Stock investors who panicked and sold right after a stock market crash moved out of the market at one of its lowest points. The result—buying high and selling low—is the opposite of Will Rogers' famed investment advice, and is guaranteed to produce an unhappy outcome.

Properly assessing your tolerance for risk is designed to prevent you from making panic decisions, abandoning your investment plan mid-stream at the worst possible time. How can tolerance be measured?

While many questionnaires seek to grade risk tolerance, the best approach is to simply examine the worst-case scenario—a loss over a one-year period—and ask yourself whether you could stick with your investment plan in the face of such a loss.

Investors with a **low** tolerance for risk generally can sustain losses of no more than **5%** over a one-year period. Individual securities with this kind of characteristic include money market funds and certificates of deposit, both of which protect the underlying principal investment with virtually no risk of loss, and short-term bond investments.

Investors with a **moderate** tolerance for risk can generally withstand losses of between **6% and 15%** over a one-year period. Types of securities that may sustain these kinds of losses include intermediate- and long-term bond portfolios and high-quality, lower-risk dividend-paying stock portfolios.

Investors with a **high** tolerance for risk can generally withstand losses of between **16% and 25%** annually. Security types that may sustain these kinds of losses include aggressive growth stock portfolios, portfolios of stocks of smaller firms and emerging market stock portfolios.

Note that the examples of security types are presented merely to give you an idea of the level of losses discussed. If you are drawn to one of those kinds of securities, you probably have a tolerance for risk approaching that type of security. The examples are not meant to limit investors solely to the choices within each risk level. In fact, we shall see later in the series that even a low-risk investor can benefit by diversifying into riskier investments with part of their portfolio while maintaining a low-risk profile. In addition, the losses outlined are typical for the security types as a group; individual securities within these types could sustain losses much greater than a portfolio of securities.

### **Step 3: How Do I Decide the Rate of Return I'm Shooting For?**

Individuals differ greatly in their return needs. If you depend on your investment portfolio for part of your annual income, for example, you will want returns that emphasize relatively higher annual payouts that tend to be consistent each year and protect principal.

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On the other hand, individuals who are saving for a future event—a child's education, a house, or retirement, for instance—would want returns that tend to emphasize growth. Of course, many individuals may want a blending of the two—some current income, but also some growth.

Determining your return needs is important because you can't have all of everything—there is no investment that offers a high certain payout each year, protects your principal and offers a high potential for future growth.

There are a number of trade-offs here, based on the risk/return trade-off. First, the price for principal protection is lower returns, usually in the form of lower annual income. There is also a trade-off between income and growth: The more certain the annual payment, the less risky the investment, and therefore the lower the potential return in the form of growth.

These trade-offs can be seen by looking at examples of individual securities from least risky to most risky:

- Money market funds, certificates of deposit and short-term bonds offer the most certain annual payouts plus protection of principal, but offer virtually no potential for growth.
- Longer-term bonds offer higher annual payouts, but less protection of principal and little growth potential.
- High-quality dividend-paying stocks offer less certain annual payouts, since dividends aren't assured, and no principal protection, since stock prices aren't guaranteed, but they offer considerable growth potential.
- Finally, growth stocks offer the most potential for growth, but rarely pay dividends.

Again, these securities are mentioned only as examples of return characteristics to help you identify your own needs. Individuals with specific return needs will not necessarily invest exclusively in securities with those same characteristics. Diversifying among different types of securities in the proper proportion will still allow you to meet your return needs, as long as you have identified them properly.

#### **Step 4: Am I a Long-Term or Short-Term Investor?**

The length of time you will or can be invested is important because it can directly affect your ability to reduce risk.

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Time diversification is most critical for volatile investments such as stocks, where prices fluctuate greatly over the short term, but are considerably smoothed over longer time periods.

If your time horizon is short, you cannot effectively be diversified across different market environments. Longer time horizons allow you to take on greater risks—with a greater return potential—because some of that risk can be reduced through time diversification.

How should time horizon be measured? Your time horizon starts with whenever your investment portfolio is implemented, and ends when you will need to take the money out of your investment portfolio.

If you are investing to save for a specific event, such as tuition payments or the purchase of a house, your time horizon is fairly easily measured—it ends when you need the cash.

If you are investing to accumulate a sum for periodic withdrawals, such as during retirement, your time horizon is more difficult to quantify as you approach the time that withdrawals will begin. For instance, when you retire, you may need to take out only part of your investment portfolio as income each year. Your time horizon will be a blend—partly short-term, and partly intermediate- or longer-term.

What constitutes short-, intermediate- and long-term horizons?

Time diversification is directly affected by time horizon, so it makes sense to use that as a starting point. Since time diversification is most effective for the most risky investments—stocks—it sets the long-term horizon.

To diversify over various economic cycles, you must be invested through one complete economic cycle at the very least. In general, the economic cycle lasts about five years, which can be considered a long-term horizon. An even longer-term horizon—over 10 years—would cover several cycles and ensure even greater time diversification, which is useful when investing in particularly risky stocks.

What about short- and intermediate-term horizons? Since the horizon is less than five years, stocks shouldn't be considered. In addition, the sooner you need the investment, the greater the need for principal protection and ease of selling.

A short-term horizon—under five years—effectively limits you to fixed-income securities. If you need the money within a year or two, you are limited to the shorter end of the fixed-income spectrum—money market funds, very short-term bonds and short-term certificates of deposit. A somewhat longer-term outlook—two to five years—allows you a little more room to earn higher returns using intermediate-term (less than five years) bonds and intermediate-term certificates of deposit.

### **Step 5: How Do Taxes Impact My Investment Decisions?**

The bottom line to all investors is what's left after taxes. The level at which you are taxed will have a big impact on the kinds of investments that will provide you with the best aftertax return.

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Investors who are in higher income tax brackets need to be concerned with the tax implications of their investments. For instance, part of the return from a high dividend-paying stock is in the form of an annual dividend that is taxed each year. High tax exposure investors would want to avoid or shelter in a tax-exempt account, such as an IRA, investments that generate high annual income, and stress those that offer long-term growth, where taxes can be deferred until the investment is sold. If these investors need fixed-income securities, they would probably prefer those that offer some tax exemption, such as municipal securities.

Investors who are in lower income tax brackets need to worry less about the tax implications of their investments. Conversely, they should avoid securities that benefit high tax-exposure investors. For instance, the yields paid on municipal securities are usually attractive only for investors in the top tax brackets.

With the tax laws changing regularly, it is difficult to quantify what constitutes "lower" and "higher" tax exposure (perhaps the terms "high" and "even higher" would be more accurate). However, if your annual income level puts you within the top federal income tax categories, you fall within the "higher" category, and if your income level puts you in the lower federal tax categories, you are in the "lower" category.



Table 1 summarizes the four aspects of the personal investment profile.

|                       | Explanation   | Range  | Security Groups With These Characteristics   |
|-----------------------|---|--|--|
| <b>Risk Tolerance</b> | How much of a loss can you stomach over a one-year period without abandoning your investment plan?                  | Low: 0% to 5% loss.  | Low: Money market funds, CDs.  |
|                       |   | Moderate: 6% to 15% loss.  | Moderate: Intermediate and long-term bonds, conservative high dividend-paying stocks.  |
|                       |   | High: 16% to 25% loss.   | High: Growth stocks.   |
| <b>Return Needs</b>   | What form of portfolio return do you need to emphasize: income, growth or both?                                     | Income: Steady source of annual income.  | Income: Bonds.   |
|                       |   | Growth/Income: Some steady annual income, but some growth is also needed.      | Growth/Income: Dividend-paying stocks.   |
|                       |   | Growth: Growth to assure real (after inflation) increase in portfolio value.   | Growth: Growth stocks  |
| <b>Time Horizon</b>   | How soon do you need to take the money out of your investment portfolio?  | Short: 1 to 5 years.   | Short: Money market funds, CDs, short-term bonds; intermediate-term bonds (less than 5 years).                                   |
|                       |   | Long: Over 5 years.  | Long: Growth stocks, aggressive growth stocks  |
| <b>Tax Exposure</b>   | Based on your annual income, at what tax bracket will additional income from portfolio earnings and gains be taxed? | Lower: Annual income is such that marginal tax bracket is among lower rates.   | Lower tax exposure securities (stressed by high tax-exposure investors): Municipal bonds, non-dividend-paying growth stocks.     |
|                       |   | Higher: Annual income is such that marginal tax bracket is among higher rates. | Higher tax exposure securities (stressed by lower tax-exposure investors): Fixed income securities, high dividend-paying stocks. |



## Step 6: Do My Investment Needs Change as I Get Older?

Your personal investment profile will change over time. For instance, your tolerance for risk may change as you get older, or as you acquire more assets and become more financially secure. When you approach retirement, your time horizon may shift, and become a blend of long-term and medium- or short-term needs. As it does so, you will need to make revisions to your investment plan to reflect these changes.

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Table 2 shows how an investor's profile may change over time. The table also illustrates the degree to which profiles can vary.

Of course, your own profile may be very different than the one presented here; your profile may even fit one of those listed here, such as early retirement, even though you are in a different stage—perhaps early career. The table is only an example.

An effective investment portfolio is one that is based on a balance between the risks you are willing to take and the returns you need to achieve your goals.

An understanding of the various aspects of your investment profile will allow you to assess that proper balance.

The next step is to match the investment characteristics of the various asset categories to your risk and return characteristics in an efficient manner that maximizes return while minimizing risk.

Table 2. Life Cycle Investing: A Changing Profile

|                | Early Career | Middle Career | Late Career | Early Retirement | Late Retirement |
|----------------|--------------|---------------|-------------|------------------|-----------------|
| Risk Tolerance | High         | High          | Moderate    | Moderate         | Low             |
| Return Needs   | Growth       | Growth        | Growth      | Growth/Income    | Income          |
| Time Horizon   | Long         | Long          | Long        | Short/Long       | Short/Long      |
| Tax Exposure   | Lower        | Higher        | Higher      | Lower            | Lower           |

# AAIL: Mutual Funds by Design (What Is a Mutual Fund?)



## Step 1: What Is A Mutual Fund?

A mutual fund is an investment company that pools investors' money to invest in securities. An open-end mutual fund continuously issues new shares when investors want to invest in the fund, and it redeems shares when investors want to sell. A mutual fund trades directly with its shareholders, and the share price of the fund represents the market value of the securities that the fund holds.

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There are several advantages that mutual funds offer individual investors. They provide:

- Professional investment management usually at a low cost, even for small accounts;
- A diversified group of securities that only a large portfolio can provide;
- Information through prospectuses and annual reports that facilitates comparisons among funds;
- Special services such as check writing, dividend reinvestment plans, telephone switching, and periodic withdrawal and investment plans;
- Account statements that make it easy to track the value of your investment and that ease the paperwork at tax time.

Successful investing takes time and effort, and it requires special knowledge and relevant, up-to-date information. Investors must spend a considerable amount of energy searching for opportunities and monitoring each investment. Professional investment management is relatively cheap with mutual funds. The typical adviser charges about 0.5% annually for managing a fund's assets. For an individual making a \$10,000 investment, that comes to only \$50 a year.

Of course, mutual fund investing does not preclude investing in securities on your own. One useful strategy would be to invest in mutual funds and individual securities. The mutual funds would ensure your participation in overall market moves and lend diversification to your portfolio, while the individual securities would provide you with the opportunity to apply your specific investment analysis skills.

## **Step 2: How Would I Benefit From Investing in a Mutual Fund?**

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If there is one ingredient to successful investing that is universally agreed upon, it is the benefit of diversification. This is a concept that is backed by a great deal of research, market experience, and common sense. Diversification reduces risk. Risk to investors is frequently defined as volatility of return—in other words, how much an investment's return might vary over a year. Investors prefer returns that are relatively predictable, and thus less volatile. On the other hand, they want returns that are high, but higher returns are accompanied by higher risks. Diversification eliminates some of the risk without reducing potential returns.

Mutual funds, because of their size and the laws governing their operation, provide investors with diversification that might be difficult for an individual to duplicate. This is true not only for common stock funds, but also for bond funds, municipal bond funds, international bond and stock funds—in fact, for almost all mutual funds. Even the sector funds that invest only within one industry offer diversification within that industry. The degree of diversification will vary among funds, but most will provide investors with some amount of diversification.

## **Step 3: What's a Fund Load?**

AAII materials focus on no-load and low-load mutual funds. Investors should realize that:

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- A load is a sales commission that goes to the seller of the fund shares;
- A load does not go to anyone responsible for managing the fund's assets and does not serve as an incentive for the fund manager to perform better;
- Funds with loads, on average, consistently underperform no-load funds when the load is taken into consideration in performance calculations;
- For every high-performing load fund, there exists a similar no-load or low-load fund that can be purchased more cheaply;
- Loads understate the real commission charged because they reduce the total amount being invested: \$10,000 invested in a 6% front-end load fund results in a \$600 sales charge and only a \$9,400 investment in the fund;
- If the money paid for the load had been working for you, as in a no-load fund, it would have been compounding over your holding period.

The bottom line in any investment is how it performs for you, the investor, and that performance includes consideration of all loads, fees, and expenses. There may be some load funds that will do better even if you factor in the load, but you have no way of finding that fund in advance. The only guide you have is historical performance, which is not necessarily an indication of future performance. With a heavily loaded fund, you are starting your investment with a significant loss—the load. Avoid unnecessary charges whenever possible.

## Step 4: What Other Fees Do I Need to Know About?

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It is best to stick with no-load or low-load funds, but they are becoming more difficult to distinguish from heavily loaded funds. The use of high front-end loads has declined, and funds are now turning to other kinds of charges. Some mutual funds sold by brokerage firms, for example, have lowered their front-end loads, and others have introduced back-end loads (deferred sales charges), which are sales commissions paid when exiting the fund. In both instances, the load is often accompanied by annual charges.

On the other hand, some no-load funds have found that to compete, they must market themselves much more aggressively. To do so, they have introduced charges of their own.

The result has been the introduction of low loads, redemption fees, and annual charges. Low loads—up to 3%—are sometimes added instead of the annual charges. In addition, some funds have instituted a charge for investing or withdrawing money.

Redemption fees work like back-end loads: You pay a percentage of the value of your fund when you get out. Loads are on the amount you have invested, while redemption fees are calculated against the value of your fund assets. Some funds have sliding scale redemption fees, so that the longer you remain invested, the lower the charge when you leave. Some funds use redemption fees to discourage short-term trading, a policy that is designed to protect longer-term investors. These funds usually have redemption fees that disappear after six months.

Some funds, usually index funds, may charge a fee, 1% for example, on all new money invested in the fund. This charge defrays the cost of investing the new money. In effect, the new investment pays its way rather than having the transaction costs charged to investments already in the fund.

Probably the most confusing charge is the annual charge, the 12b-1 plan. The adoption of a 12b-1 plan by a fund permits the adviser to use fund assets to pay for distribution costs, including advertising, distribution of fund literature such as prospectuses and annual reports, and sales commissions paid to brokers. Some funds use 12b-1 plans as masked load charges: They levy very high rates on the fund and use the money to pay brokers to sell the fund. Since the charge is annual and based on the value of the investment, this can result in a total cost to a long-term investor that exceeds a high up-front sales load. A fee table is required in all fund prospectuses to clarify the impact of a 12b-1 plan and other charges.

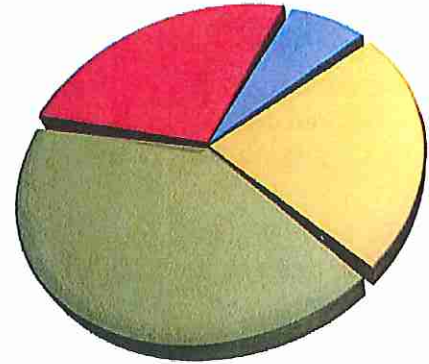
The fee table makes the comparison of total expenses among funds easier. Selecting a fund based solely on expenses, including loads and charges, will not give you optimal results, but avoiding funds with high expenses and unnecessary charges is important for long-term performance.



## AAII Asset Allocation Models

Our asset allocation area is an unbiased educational resource for anyone interested in asset allocation and portfolio building.

In this area, you'll see the performance of many popular investment benchmarks; plus you'll benefit from being able to review AAIL's asset allocation models. The models are designed to help you match your risk level with appropriate asset classes.



### Popular Investment Benchmarks (Data as of 11/30/2013)




| <b>Stocks</b>                             | <b>Standard<br/>Deviation</b> | <b>1 yr</b> | <b>5 yrs</b> | <b>10 yrs</b> |
|---|-------------------------------|-------------|--------------|---------------|
| Large-Cap Stocks                          | 12.48%                        | 30.1%       | 17.47%       | 7.57%         |
| Mid-Cap Stocks                            | 15.46%                        | 31.72%      | 21.76%       | 9.73%         |
| Small-Cap Stocks                          | 16.68%                        | 38.29%      | 23.09%       | 10.17%        |
| International Stocks                      | 17.19%                        | 24.25%      | 13.03%       | 7.46%         |
| Emerging Markets Stocks                   | 20.1%                         | 1.32%       | 15.88%       | 11.38%        |
| <b>Fixed Income</b>                       |                               |             |              |               |
| Intermediate Bonds                        | 3.76%                         | -2.03%      | 3.94%        | 4.84%         |
| Short-Term Bonds                          | 0.91%                         | 0.32%       | 1.68%        | 2.87%         |
| <b>Overall market</b>                     |                               |             |              |               |
| Vanguard Total Stock Market Index (VTSMX) | 13.09%                        | 31.48%      | 18.54%       | 8.19%         |

## AAL Asset Allocation Models

What is your investor profile? Follow one of our recommended allocations and check back frequently for monthly return data.

| Investor Profile                          | Standard Deviation | 1 yr  | 5 yrs | 10 yrs |
|---|--------------------|-------|-------|--------|
| <b><u>Aggressive Investor</u></b>         |                    |       |       |        |
| Age 18-35<br>30+ Years Investment Horizon | 12.4%              | 24.8% | 17.1% | 8.6%   |
| <b><u>Moderate Investor</u></b>           |                    |       |       |        |
| Age 35-55<br>20+ Years Investment Horizon | 9.2%               | 19.3% | 14.1% | 7.6%   |
| <b><u>Conservative Investor</u></b>       |                    |       |       |        |
| Age 55+<br>10+ Years Investment Horizon   | 5.9%               | 15.0% | 11.2% | 6.5%   |

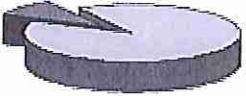
### Suggested Allocation Breakdowns

| <u>Aggressive</u>  | <u>Moderate</u>   | <u>Conservative</u>   |
|--|---|---|
|   |    |    |
| <ul style="list-style-type: none"> <li>20% Large-Cap Stocks</li> <li>20% Mid-Cap Stocks</li> <li>20% Small-Cap Stocks</li> <li>20% International Stocks</li> <li>10% Emerging Markets Stocks</li> <li>10% Intermediate Bonds</li> <li>0% Short-Term Bonds</li> </ul> | <ul style="list-style-type: none"> <li>20% Large-Cap Stocks</li> <li>20% Mid-Cap Stocks</li> <li>10% Small-Cap Stocks</li> <li>15% International Stocks</li> <li>5% Emerging Markets Stocks</li> <li>30% Intermediate Bonds</li> <li>0% Short-Term Bonds</li> </ul> | <ul style="list-style-type: none"> <li>25% Large-Cap Stocks</li> <li>10% Mid-Cap Stocks</li> <li>10% Small-Cap Stocks</li> <li>5% International Stocks</li> <li>0% Emerging Markets Stocks</li> <li>40% Intermediate Bonds</li> <li>10% Short-Term Bonds</li> </ul> |
| <b>Aggressive Portfolio Return</b>   | <b>Moderate Portfolio Return</b>  | <b>Conservative Portfolio Return</b>  |
| YTD: 21.7%   | YTD: 17.2%  | YTD: 14.0%  |
| 1 yr: 24.8%  | 1 yr: 19.3%   | 1 yr: 15.0%   |
| 5 yrs: 17.1%   | 5 yrs: 14.1%  | 5 yrs: 11.3%  |
| 10 yrs: 8.6%   | 10 yrs: 7.6%  | 10 yrs: 6.5%  |

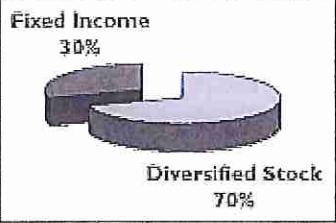


## Broad Allocation Scenarios

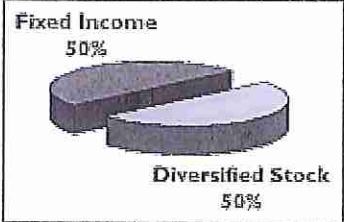
### Aggressive Investor

| Allocations  | Characteristics  | Time Horizon  |
|--|--|---|
| <div><p>Fixed Income<br/>10%</p><p>Diversified Stock<br/>90%</p><p><b>Aggressive Portfolio Return</b></p><p>1 yr: 24.8%</p><p>5 yrs: 17.1%</p><p>10 yrs: 8.6%</p></div> | <p><b>Growth:</b> Substantial</p> <p><b>Income:</b> Very Low</p> <p><b>Risk:</b> Substantial<br/>Year-to-Year<br/>Volatility of<br/>Portfolio<br/>Value</p> <p>10% Average<br/>Annual<br/>Growth in<br/>Value</p> <p>-30% Bad Year</p> | <p><b>Age:</b> often 18-35</p> <p><b>30+Years:</b> Long<br/>Investment<br/>Horizon</p> <p><b>For investors who are<br/>very risk tolerant</b></p> |
| <p>Transition: <b>80% Diversified Stock</b>   Investors, as they age, usually transition<br/><b>20% Fixed Income</b>   their portfolios toward less risky and less<br/>aggressive asset allocations.</p>   |  |   |

## Moderate Investor

| Allocations   | Characteristics   | Time Horizon  |
|---|---|---|
|  <p><b>Fixed Income</b><br/>30%</p> <p><b>Diversified Stock</b><br/>70%</p> <p><b>Moderate Portfolio Return</b></p> <p>1 yr: 19.3%</p> <p>5 yrs: 14.1%</p> <p>10 yrs: 7.6%</p> | <p><b>Growth:</b> Moderate</p> <p><b>Income:</b> Low</p> <p><b>Risk:</b> Moderate</p> <p>Year-to-Year<br/>Volatility of<br/>Portfolio<br/>Value</p> <p>8% Average<br/>Annual<br/>Growth in<br/>Value</p> <p>-20% Bad Year</p> | <p><b>Age:</b> often 35-55</p> <p><b>20+Years:</b> Mid-Term<br/>Investment<br/>Horizon</p> <p><b>For investors who can<br/>tolerate some risk</b></p> |
| <p><b>Transition:</b> 60% <b>Diversified Stock</b> 40% <b>Fixed Income</b> Investors, as they get closer to retirement, usually transition their portfolios toward lower risk and more conservative allocations.</p>  |   |   |

## Conservative Investor

| Allocations  | Characteristics   | Time Horizon   |
|--|---|--|
| <div data-bbox="235 378 576 598"><p data-bbox="251 388 397 430">Fixed Income<br/>50%</p><p data-bbox="381 535 560 577">Diversified Stock<br/>50%</p></div> <p data-bbox="251 604 560 640"><b>Conservative Portfolio</b></p> <p data-bbox="349 646 462 682"><b>Return</b></p> <p data-bbox="341 688 503 724">1 yr: 15.0%</p> <p data-bbox="324 730 519 766">5 yrs: 11.3%</p> <p data-bbox="308 772 535 808">10 yrs: 6.5%</p> | <p data-bbox="657 388 852 424"><b>Growth:</b> Low</p> <p data-bbox="657 436 917 472"><b>Income:</b> Moderate</p> <p data-bbox="698 487 982 630"><b>Risk:</b> Low Year-to-Year Volatility of Portfolio Value</p> <p data-bbox="722 646 925 787">6% Average Annual Growth in Value</p> <p data-bbox="698 802 917 835">-15% Bad Year</p> | <p data-bbox="1153 388 1356 424"><b>Age:</b> often 55+</p> <p data-bbox="1079 436 1380 546"><b>10+Years:</b> Short-Term Investment Horizon</p> <p data-bbox="1079 609 1380 682"><b>For investors who are not risk tolerant</b></p> |

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# Building Your Future: Investing

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*A Student and Teacher Resource  
for Financial Literacy Education*

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The Actuarial Foundation

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## About This Book

Personal finance is part knowledge and part skill – and the *Building Your Future* book series gives students a foundation in both. It addresses knowledge by covering the essential principles of banking in Book One, financing in Book Two, investing in Book Three, and succeeding in Book Four. The series also addresses the mathematical skills that students need to live a financially healthy life. Students will be able to see the real-world consequences of mastering their finances, which helps them understand the relevance of good mathematical skills. We hope you enjoy this *Building Your Future* book series.

The catalyst for this book series was based on an original book authored and donated to The Actuarial Foundation by an actuary, James A. Tilley, FSA, who was interested in financial literacy education in schools. We thank Mr. Tilley for his original works that inspired this *Building Your Future* series.

## About The Actuarial Foundation

The Actuarial Foundation, a 501(c)(3) nonprofit organization, develops, funds and executes education, scholarship, and research programs that serve the public and the profession by harnessing the talents and resources of actuaries. Through *Advancing Student Achievement*, a program that seeks to improve and enhance student math education in classrooms across the country, we are proud to add *Building Your Future*, a financial literacy education curriculum for teachers and students, to our library of math resources. Please visit the Foundation's Web site at: [www.actuarialfoundation.org](http://www.actuarialfoundation.org) for additional educational materials.

**What is an Actuary?** Actuaries are the leading professionals in finding ways to manage risk. It takes a combination of strong math and analytical skills, business knowledge and understanding of human behavior to design and manage programs that control risk. "Actuary" was included as one of the Best Jobs of 2012 as reported in the Wall Street Journal. To learn more about the profession, go to: [www.BeAnActuary.org](http://www.BeAnActuary.org).

# Building Your Future

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*Some of the activities in this book reference specific Web pages. While active at the time of publication, it is possible that some of these Online Resource links may be renamed or removed by their hosts at some point in the future. Note that these links were provided simply as a convenience; a quick search should reveal some of the many other online resources that can be used to complete these activities. Facts and opinions contained are the sole responsibility of the organizations expressing them and should not be attributed to The Actuarial Foundation and/or its sponsor(s).*



# Building Your Future

## Chapter 1: Bonds



### Did You Know....

Some bonds, like municipal bonds, are exempt from some taxes.

### Key Terms:

- Earnings
- Bond
- Issuer
- Holder
- Coupons
- Certificates
- Face amount
- Coupon rate
- Maturity date
- Price
- Cost of funds
- Fair market price
- Yield to maturity
- Fluctuations

### What You'll Learn

One way to increase the amount of interest you earn on your money is by "lending" money to the government or a business in the form of a bond purchase. Government and corporate bonds offer people the opportunity to invest in a variety of ways that can generate **earnings** while providing a great deal of security.

#### **earnings**

*money earned through paid employment, as profit, or from investments*

### Understanding Bonds

Most people who save money do not put all of their money into a bank savings account. While bank savings accounts allow for easy access of funds, these accounts typically don't pay much interest on deposited funds. If you're looking for a way to save money and earn more interest, **bonds** offer you an opportunity to increase your earnings.

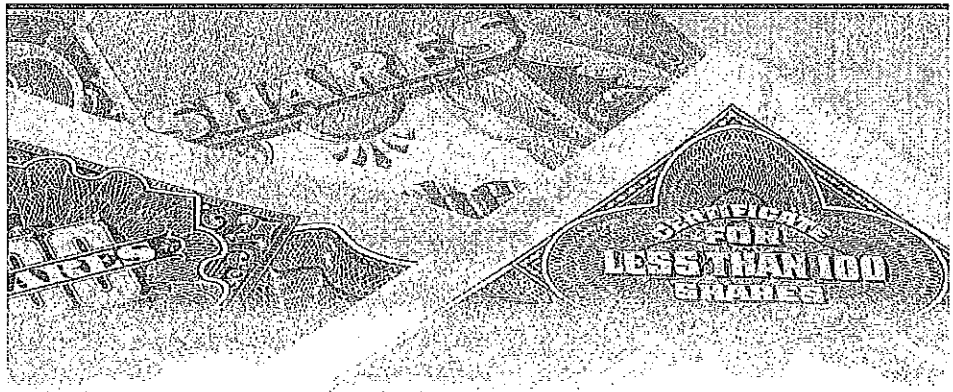
#### **bond**

*a loan made by an investor to a government or company with the promise that the principal amount borrowed will be repaid, usually with interest, at a specific time, usually a year or more in the future*

Many large companies and governments need to borrow large sums of money so they can have funds to conduct business. When companies or governments decide to borrow, they often opt to "issue," or sell, bonds. Basically, the investor is loaning his or her money to the company or government knowing that when the specified time is up, he or she will be repaid with interest.

### Career Link

*Actuaries working for government agencies or investment banks help specific organizations determine when to issue bonds, how many bonds to issue, the bonds' price and interest rate, and the maturity date for the bond offering.*

**issuer**

*the government or company  
that borrows the money*

**holder**

*the person or company who  
purchases the bond*

**coupons**

*interest payments made by  
the bond issuer  
to the bond holder*

**certificates**

*documents issued by  
a government or company  
that include the name of the  
issuer, the interest rate and  
the bond's maturity date*

**face amount**

*the amount of money  
borrowed by the issuer*

**coupon rate**

*the annual percentage  
interest rate paid on the bond*

**maturity date**

*date by which the issuer  
must repay the principal  
amount borrowed*

In a bond transaction, there is a bond **issuer** (most often a company or government) and a bond **holder**. Bonds generally require the investment of a larger sum of money, typically \$1,000 or more. Depending on the type of bond, minimum investment amounts can be as high as \$100,000.

Just like any other loan, the borrower must pay interest to the lender. Unlike a bank savings account or a home loan where interest is paid monthly, bond issuers typically pay interest to the holders every six months through **coupons**.

Long ago, all bonds were issued on official papers called **certificates**. Along the certificates' side or bottom were coupons representing the interest payment that was to be made by the issuer on the date specified on the coupon. The bond holder would cut out the coupon and send it to the issuer. After receiving the coupon, the issuer would make the interest payment to the bond holder. Today, bond records are maintained by computers and the interest money owed to the holder is automatically sent to the holder, typically to an account maintained by the holder at an investment firm.

To understand how bond interest is computed, there are several terms you must know. When you purchase a bond, the bond's **face amount** is printed on the front of the bond certificate. If the minimum size of a bond is \$1,000, then the face amount would be \$1,000. The bond's **coupon rate** is also printed on the bond certificate's face.

Another important piece of information on the bond certificate is the **maturity date**. For example, if you purchased a \$1,000 bond on January 1, 2012 and it was a ten-year bond, the maturity date printed on the bond would be January 1, 2022, which is ten years from the date of issue.

The first coupon payment for a typical bond occurs six months after it is issued. If the bond was issued on January 1, 2012, then the first coupon payment would be on July 1, 2012 and the second coupon payment would be on

January 1, 2013. Since the interest is paid twice each year, the interest rate applied to each six-month period is exactly one half of the annual coupon rate.



## Examples and Practice

For this example, let's assume that you purchased a \$10,000 bond with an annual coupon rate of 7.00% for a period of ten years. Create a spreadsheet based on this example and answer the questions below.

|   | A        | B           | C                  | D              | E                  | F                           |
|---|----------|-------------|--------------------|----------------|--------------------|-----------------------------|
| 1 | Date     | Face Amount | Annual Coupon Rate | Coupon Payment | Face Amount Repaid | Total Cash Payment Received |
| 2 | 3/1/2012 | \$10,000.00 | 7.00%              | \$350.00       | \$0.00             | \$350.00                    |
| 3 | 9/1/2012 | \$10,000.00 | 7.00%              | \$350.00       | \$0.00             | \$350.00                    |

- How do you calculate the Coupon Payment amount in column D? Describe the mathematical steps for doing this along with the spreadsheet formula you would use.
- How much money will you make each year from this investment? Note that interest from bonds does not compound.
- Over the life of the bond, how much will you receive in total cash payments?

## Bond Pricing

As an investor, it is important to understand how bonds are **priced**. If you are purchasing a newly-issued bond, then the amount you pay for the bond is typically the face amount, and the issuer must pay you the **cost of funds**. However, if you want to purchase a bond some time after the date it was issued, then pricing becomes more complicated.

**price**  
amount the investor must  
pay for the bond

**cost of funds**  
the interest rate that the  
issuer must pay on the bond

Assume that it's March 1, 2014, and that you own ten-year bonds purchased in March of 2012 with a face amount of \$10,000, and a coupon rate of 7%. You want to buy an additional \$10,000 in bonds from the same issuer, with the same maturation date, and you want a coupon rate of 7%. There's just one problem: the current interest rate in the financial marketplace is 6%. That means that today, the issuer will sell any new bonds at a coupon rate of 6% and a maturity date of March 1, 2022. The bond still sells for exactly \$10,000. But it does not provide the 7% coupon rate that you want.

There's still a way to purchase an additional \$10,000 in bonds and still receive a 7% coupon rate despite current market conditions: just buy some more of the original bonds (the ones issued in 2012) on the open market. The question is, how much will they cost today?



## Examples and Practice

Use the data from the spreadsheet you previously created to find out how much interest the new bond will earn. Answer the questions below.

- How much interest will you earn each year on the new bond?
- Over the course of the bond's life, how much interest will you earn on the new bond?
- Would you be willing to pay more out of pocket to purchase an old bond rather than a new bond? Why?

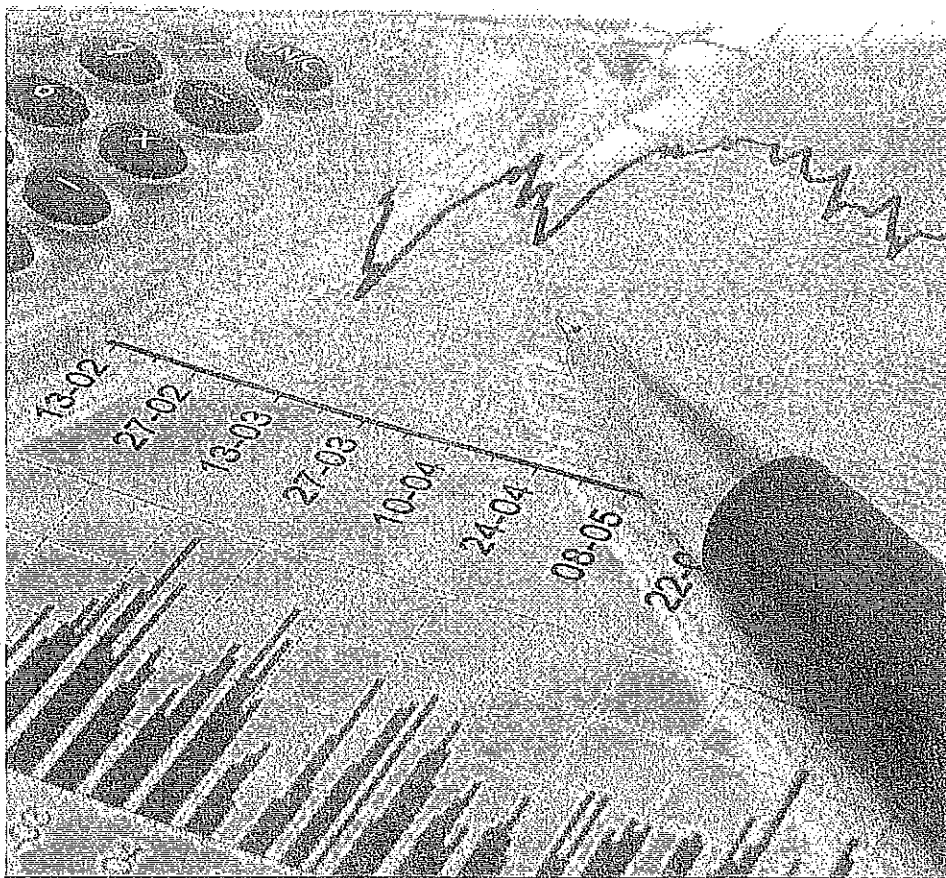
Earlier you learned the concepts of discount factor and present value. You can use these concepts to determine the price of the old bond. You will remember that we use the discount factor to compute the present value of money at different times in the future. To clearly see how we use this to determine the price of the old bond, study the spreadsheet below.

|    | A                | B                       | C                         | D                | E                      | F | G               | H                              | I                              |
|----|------------------|-------------------------|---------------------------|------------------|------------------------|---|-----------------|--------------------------------|--------------------------------|
| 1  | Six-month Period | Six-month Interest Rate | Beginning Account Balance | Interest Payment | Ending Account Balance |   | Discount Factor | Period-by-period Bond Payments | Present Value of Bond Payments |
| 2  | 1                | 3.00%                   | \$10,000.00               | \$300.00         | \$10,300.00            |   | .970874         | \$350.00                       | \$339.81                       |
| 3  | 2                | 3.00%                   | \$10,300.00               | \$309.00         | \$10,609.00            |   | .942596         | \$350.00                       | \$329.91                       |
| 4  | 3                | 3.00%                   | \$10,609.00               | \$318.27         | \$10,927.27            |   | .915142         | \$350.00                       | \$320.30                       |
| 5  | 4                | 3.00%                   | \$10,927.27               | \$327.82         | \$11,255.09            |   | .888487         | \$350.00                       | \$310.97                       |
| 6  | 5                | 3.00%                   | \$11,255.09               | \$337.65         | \$11,592.74            |   | .862609         | \$350.00                       | \$301.91                       |
| 7  | 6                | 3.00%                   | \$11,592.74               | \$347.78         | \$11,940.52            |   | .837484         | \$350.00                       | \$293.12                       |
| 8  | 7                | 3.00%                   | \$11,940.52               | \$358.22         | \$12,298.74            |   | .813092         | \$350.00                       | \$284.58                       |
| 9  | 8                | 3.00%                   | \$12,298.74               | \$368.96         | \$12,667.70            |   | .789409         | \$350.00                       | \$276.29                       |
| 10 | 9                | 3.00%                   | \$12,667.70               | \$380.03         | \$13,047.73            |   | .766417         | \$350.00                       | \$268.25                       |
| 11 | 10               | 3.00%                   | \$13,047.73               | \$391.43         | \$13,439.16            |   | .744094         | \$350.00                       | \$260.43                       |
| 12 | 11               | 3.00%                   | \$13,439.16               | \$403.17         | \$13,842.34            |   | .722421         | \$350.00                       | \$252.85                       |
| 13 | 12               | 3.00%                   | \$13,842.34               | \$415.27         | \$14,257.61            |   | .701380         | \$350.00                       | \$245.48                       |
| 14 | 13               | 3.00%                   | \$14,257.61               | \$427.73         | \$14,685.34            |   | .680951         | \$350.00                       | \$238.33                       |
| 15 | 14               | 3.00%                   | \$14,685.34               | \$440.56         | \$15,125.90            |   | .661118         | \$350.00                       | \$231.39                       |
| 16 | 15               | 3.00%                   | \$15,125.90               | \$453.78         | \$15,579.67            |   | .641862         | \$350.00                       | \$224.65                       |
| 17 | 16               | 3.00%                   | \$15,579.67               | \$467.39         | \$16,047.06            |   | .623167         | \$10,350.00                    | \$6,449.78                     |
| 18 | 17               |                         |                           |                  |                        |   |                 |                                |                                |
| 19 | 18               |                         |                           |                  |                        |   |                 |                                | \$10,628.06                    |
| 20 | 19               |                         |                           |                  |                        |   |                 |                                |                                |

The spreadsheet shows the current six-month interest rate of 3.00% for the six-month period, half of the yearly coupon rate. Column A shows the six-month periods on the bond, and column G shows the bond's discount factor. (As you will recall, to determine the discount rate, you divide the current value of your money—in this case, \$10,000—by the amount it will be worth in the future; in this case, the ending account balance shown in column E). Column H shows the coupon payments and the final repayment of the face amount for the old bond. Column I illustrates the present value of the bonds by multiplying the payment amounts in column H by the discount factor in column G. The amount in cell I19 is the total from column I and is the price you would pay if you wanted to purchase the old bond today.

We added up all of the numbers in column I to determine the price of the old bond today so that we could calculate the **fair market price**. The bond is nothing more or less than the series of future payments that is shown in column H. The bond is worth \$10,628.06, exactly what that series of future payments is worth. The amounts in column I show what each of the future payments are worth today, and the sum of those present values is what the bond is worth and what you would have to pay to purchase the old bond.

**fair market price**  
*the price that a reasonable  
 investor would expect to  
 pay for the bond*





## Examples and Practice

To test this theory, study the spreadsheet below. It uses the data related to the new bond, which yields 6% annually. Notice that the new bond is worth exactly \$10,000, the same as its purchase price.

As you think about the cost of bonds and review the samples presented, remember that when interest rates rise, bond prices go down. When interest rates go down, bond prices go up. That's because you're comparing the new rate to the old, and higher rates are more attractive. So if current rates rise, the rates on older bonds are less attractive, and if current rates fall, the rates on older bonds are more desired by investors.

|    | A                | B                       | C                         | D                | E                      | F | G               | H                              | I                              |
|----|------------------|-------------------------|---------------------------|------------------|------------------------|---|-----------------|--------------------------------|--------------------------------|
| 1  | Six-month Period | Six-month Interest Rate | Beginning Account Balance | Interest Payment | Ending Account Balance |   | Discount Factor | Period-by-period Bond Payments | Present Value of Bond Payments |
| 2  | 1                | 3.00%                   | \$10,000.00               | \$300.00         | \$10,300.00            |   | .970874         | \$300.00                       | \$291.26                       |
| 3  | 2                | 3.00%                   | \$10,300.00               | \$309.00         | \$10,609.00            |   | .942596         | \$300.00                       | \$282.78                       |
| 4  | 3                | 3.00%                   | \$10,609.00               | \$318.27         | \$10,927.27            |   | .915142         | \$300.00                       | \$274.54                       |
| 5  | 4                | 3.00%                   | \$10,927.27               | \$327.82         | \$11,255.09            |   | .888487         | \$300.00                       | \$266.55                       |
| 6  | 5                | 3.00%                   | \$11,255.09               | \$337.65         | \$11,592.74            |   | .862609         | \$300.00                       | \$258.78                       |
| 7  | 6                | 3.00%                   | \$11,592.74               | \$347.78         | \$11,940.52            |   | .837484         | \$300.00                       | \$251.25                       |
| 8  | 7                | 3.00%                   | \$11,940.52               | \$358.22         | \$12,298.74            |   | .813092         | \$300.00                       | \$243.93                       |
| 9  | 8                | 3.00%                   | \$12,298.74               | \$368.96         | \$12,667.70            |   | .789409         | \$300.00                       | \$236.82                       |
| 10 | 9                | 3.00%                   | \$12,667.70               | \$380.03         | \$13,047.73            |   | .766417         | \$300.00                       | \$229.93                       |
| 11 | 10               | 3.00%                   | \$13,047.73               | \$391.43         | \$13,439.16            |   | .744094         | \$300.00                       | \$223.23                       |
| 12 | 11               | 3.00%                   | \$13,439.16               | \$403.17         | \$13,842.34            |   | .722421         | \$300.00                       | \$216.73                       |
| 13 | 12               | 3.00%                   | \$13,842.34               | \$415.27         | \$14,257.61            |   | .701380         | \$300.00                       | \$210.41                       |
| 14 | 13               | 3.00%                   | \$14,257.61               | \$427.73         | \$14,685.34            |   | .680951         | \$300.00                       | \$204.29                       |
| 15 | 14               | 3.00%                   | \$14,685.34               | \$440.56         | \$15,125.90            |   | .661118         | \$300.00                       | \$198.34                       |
| 16 | 15               | 3.00%                   | \$15,125.90               | \$453.78         | \$15,579.67            |   | .641862         | \$300.00                       | \$192.56                       |
| 17 | 16               | 3.00%                   | \$15,579.67               | \$467.39         | \$16,047.06            |   | .623167         | \$10,300.00                    | \$6,418.62                     |
| 18 |                  |                         |                           |                  |                        |   |                 |                                |                                |
| 19 |                  |                         |                           |                  |                        |   |                 |                                | \$10,000.00                    |
| 20 |                  |                         |                           |                  |                        |   |                 |                                |                                |



## Bond Yields

We have referred to the interest rate used to compute the present values of bond payments—periodic coupons and the face amount at maturity—as the “cost of funds” for newly issued bonds. It is also known as the bond’s **yield to maturity**, which assures that the sum of the present values of all the bond payments is exactly equal to the market price of the bond. When bond yields go up, bond prices go down, and when bond yields go down, bond prices go up.

**yield to maturity**  
*the market rate of interest  
on the bond*

Bond yields to maturity are critically important to the bond markets. Bond traders who make up the over-the-counter market for all U.S. government and corporate bonds focus on yields to maturity, not bond prices. The market for bonds is quoted in terms of yields, and bond prices are derived from the quoted yields by means of the present value method.

The use of a new bond with coupon dates and a maturity date that just happen to match perfectly the coupon dates and the maturity date of an old bond is merely a device for determining the appropriate bond yield to compute the price of the old bond. In the real world, there seldom exists a new bond that perfectly matches a particular old bond that is desired by a bond trader, especially with both bonds having the same issuer.

Instead, a trader who wants to price a particular old bond will look at various other bonds that have maturity dates near the maturity date of the particular old bond he wants to price. The trader will consider many such bonds issued by the U.S. government and by various corporations to establish an appropriate yield to maturity for each bond. The trader will pay special attention to setting the appropriate difference in yield among these similar bonds of different issuers. In this manner, bond traders make the market for all bonds.

Traders’ collective activities (in response to economic news and to the demand for various bonds) result in changes to bond values from trade to trade during a business day. Such **fluctuations** in bond yields tend to be greater from day to day than from trade to trade, and greater from week to week than from day to day.

**fluctuations**  
*changes in the value  
of bonds*

### Independent Practice

Assume that loved ones have purchased bonds for you each year on your birthday with the intent that when they matured you would be able to use them to pay some of your college or other expenses often incurred by young adults (such as a new car or a down payment on a home). Using the data on the Bonds Independent Practice Worksheet that you will receive from your teacher, create a spreadsheet that will help you determine the value of the bonds. Answer the questions on the worksheet.



# Building Your Future

## Chapter 2: Stocks



### Did You Know....

Over time, the total return on stocks has exceeded that of any other class of asset. One dollar invested in stocks in 1802 would have grown to \$8.8 million in 2003, in bonds to \$16,064, in treasury bills to \$4,575, and in gold to \$19.75.

### Key Terms:

- Stock
- Share
- Shareholder
- Portfolio
- Dividend
- Annual return
- Depreciation
- Total annual return
- Exchanges
- Specialist
- Buy limit order
- Sell limit order
- Market order
- Stockbroker
- Securities firm
- Floor broker
- Transaction cost
- Online trading
- Last price
- Market value
- Annual dividend yield
- Stock price index

### What You'll Learn

The stock market offers investors the opportunity to purchase a small piece of a company in exchange for incurring the risk of making or losing money on that investment. Using data related to specific companies and industries, as well as stock price trends, you can learn the risks and rewards of investing in the stock market.

### What is Stock?

When people mull over the types of investments they want to make, most consider purchasing some type of **stock** as part of a long-term investment plan designed to accumulate money for major life events such as college or retirement. Suppose that a company has 10,000 **shares** of stock and you own 1,000 of them. This would mean you own 10% of the company as a

**stock**  
ownership in a corporation

**share**  
a unit of stock  
owned by an investor

### Career Link

*Almost all careers in the financial services industry require strong mathematical skills: brokers and traders, for example, must be able to quickly calculate prices and analyze market trends, and investment bankers who prepare stocks for public issue must be able to analyze market conditions and determine the price and volume of a stock offering.*

**shareholder**  
a person who owns one or more shares of stock

**portfolio**  
collection of investments owned by an investor



**shareholder.** To spread their risk, many times investors will own a number of different stocks in addition to other investments they might have in their **portfolio**.

### Examples and Practice

To understand more clearly how stock ownership works, consider the following scenario. You and four friends want to start a lawn and landscape business. You will need to purchase equipment such as mowers, trimmers and assorted lawn tools to get started. You calculate that it will cost \$1,000 to cover all startup costs. None of you have enough money to start the business on your own, so you agree that everyone will contribute what they can by purchasing shares of ownership. Each share will sell for \$50. In order to be part owner of the business, each person will have to purchase a minimum of one share.

Create a spreadsheet using the categories shown. Use what you know about spreadsheet formulas to calculate the missing numbers in the "Percentage of Ownership" and "Value of Shares" columns based on the total number of shares purchased. See the Company Ownership Spreadsheet below.

| Company Ownership Spreadsheet |          |                  |                         |                 |
|-------------------------------|----------|------------------|-------------------------|-----------------|
|                               | A        | B                | C                       | D               |
| 1                             | Owner    | Shares Purchased | Percentage of Ownership | Value of Shares |
| 2                             | You      | 5                |                         |                 |
| 3                             | Friend 1 | 3                |                         |                 |
| 4                             | Friend 2 | 6                |                         |                 |
| 5                             | Friend 3 | 4                |                         |                 |
| 6                             | Friend 4 | 2                |                         |                 |
| 7                             |          |                  |                         |                 |
| 8                             | Total    |                  | 100%                    | \$1,000.00      |

- How do you calculate the Percentage of Ownership amount that appears in column C? Describe the mathematical steps for doing this along with the spreadsheet formula you would use.
- How do you calculate the Value of Shares amount that appears in column D? Describe the mathematical steps for doing this along with the spreadsheet formula you would use.
- How many total shares were sold?
- Who has the greatest percentage of ownership in the company? Explain why.

## Trading Shares

In the earlier scenario, you and four friends purchased shares in a lawn and landscape business by purchasing 50 shares totaling \$1,000 altogether. After several months of business, Friend 3 learns that he will be moving out of state and wants to sell his shares. Friends 1 and 4 want to purchase an equal number of Friend 3's shares for the same price that he paid for the shares.

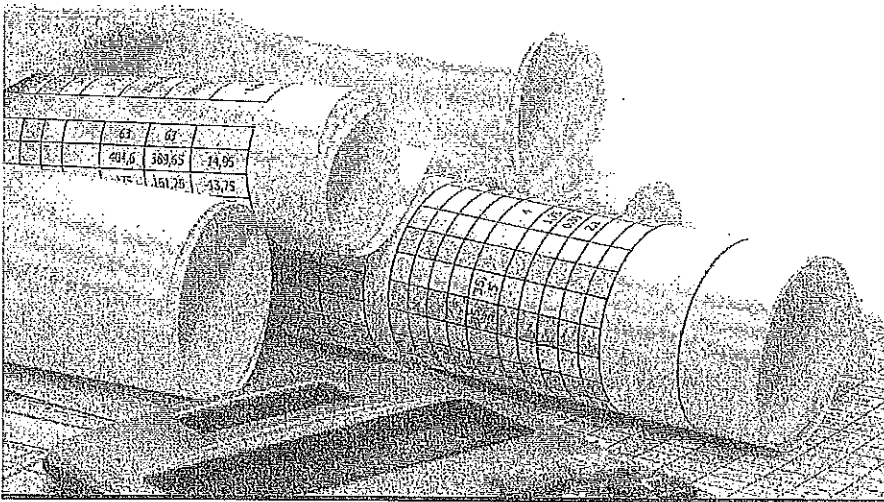
A month later, Friend 2 realizes that she needs some extra cash for an unexpected expense. Friend 2 sells two shares of stock to you for the same price she paid for the shares.

### Try It!

## Examples and Practice

Use the data above to update your spreadsheet to reflect the new ownership positions. This spreadsheet should show the shares that were traded.

- How many shares does each person now own?
- Who has the greatest percentage of ownership in the company, and how many shares of stock does this person own?



## Dividend Distribution

Since you and your friends have started a business, you are hoping it will be profitable. That is, you are hoping to make money on your investment. Over time you have developed a list of 15 clients who pay you \$40 per week to mow their lawns. After expenses, the profits from mowing each lawn equal \$32 per lawn.

You and your friends decide that the weekly profits will be distributed to the company owners at the end of each week. To make sure that the profits are distributed fairly, you need to ensure that you have correctly calculated each person's percentage of ownership. For example, if you own 20% of the business, then you should collect 20% of the weekly profits.

**dividend**  
*amount of money an investor  
is paid for each share of stock  
owned in a company*

Another way to determine the amount of money to be distributed is to calculate the **dividend**. To calculate the dividend, you must determine the total amount of profits for the week (15 lawns x \$32 per lawn = \$480 per week). Then you must divide the profits by the total number of shares in the company. In this case, there are 20 shares, making the dividend \$24 per share (\$480 earned / 20 shares = \$24 per share).



### Examples and Practice

Using the data presented above, add a column titled "Weekly Dividend" to your spreadsheet and calculate the following:

- How much does each stockholder earn in weekly dividends?
- How much would each stockholder earn on a monthly basis?
- What would happen if the profits on each lawn decreased to \$25 per lawn? Calculate the new amount each shareholder would earn.
- What would happen if the number of lawns increased to 20 and the profit remained at \$25 per lawn? Calculate the amount each shareholder would earn.

### Total Return on Investment

You can see from the spreadsheet data that during its first year, the business should make in excess of the \$1,000 that was initially invested by the shareholders. Consider the following example to calculate the business' earnings.

Your business is seasonal and operates from April through October. During that time, you had 20 lawns per week generating a profit of \$25 per week, for a total profit of \$500 per week or \$2,000 per month (20 lawns x \$25 profit per lawn = \$500 per week x 4 weeks per month = \$2,000 per month). The business operates for a total of seven months, making the overall profit \$14,000 (\$2,000 per month x 7 months = \$14,000).

**annual return**  
*the increase in an  
investment's value,  
expressed as a  
percentage per year*

Using this example, the shareholders invested \$1,000 and received an **annual return** of \$14,000 for making the investment. To calculate this percentage, you take the total amount earned divided by the total cost of the initial investment. In our example, this would be expressed as  $\$14,000 / \$1,000 = 14$ . You then multiply by 100 to turn this into a percentage. In our case, this would equal 1,400%—a great investment since each dollar invested yielded a dividend of \$14. What is important to remember about this example is that *there are very, very few investments that perform anywhere near this well*. This is partly because real companies do not consistently generate such high profits and because companies typically don't distribute all of their earnings to shareholders. They usually distribute only a small portion of their earnings to the shareholders, using the rest to build up cash reserves or invest the money back into the business.



Another thing to consider when determining the annual return is something called **depreciation**. Depreciation can occur as a result of wear and tear on equipment. In our business, the mowers, trimmers and other equipment cost \$1,000, but after a full season of use, the equipment is no longer worth \$1,000. Instead, it might be worth only \$800, so the value of the investment has decreased by \$200. This depreciation must be considered when calculating the **total annual return**. This is illustrated below:

Total earned dividend = \$14,000

Loss on the investment = \$200 (depreciation)

$\$14,000 - \$200 = \$13,800 / \$1,000$  (initial investment) = 13.8 or 1,380%

### **depreciation**

*a non-cash expense that reduces the value of a company's assets*

### **total annual return**

*annual gains and losses divided by the cost of the investment; expressed as a percentage*

**Try It!**

### **Examples and Practice**

Use the formula shown above to calculate the total annual return for the scenarios presented below.

- *In year two, the value of the equipment drops to \$650 and the dividend income falls to \$11,000. What is the total annual return?*
- *In year three, the value of the equipment is \$450 and the dividend income rises to \$11,500. What is the total annual return?*

As you can see, this is a very successful business with huge annual returns. There is a very slim chance of ever finding an investment that will generate the type of returns seen in this example. Most people are quite content to earn a 10% total annual return on the stocks they purchase, considering that the typical dividend yield on stocks generally ranges between 1.00% and 9.00%, and averages 2.00% to 3.00% across all of the stocks available in the financial marketplace.

### **Liquidating the Company**

At the end of three years, you and your friends no longer want to run the business, and you want to get some of your initial investment back so you can spend it on other things. If you cannot find anyone to purchase the business as a going concern, you will have no choice but to liquidate, or sell any existing assets at market price. The equipment is now worth \$450, and you find someone willing to buy it from the shareholders at that price. Since there were 20 shares total, the average price per share is  $\$450/20 = \$22.50$ . This means that each shareholder gets \$22.50 for each share that he or she owns.

**Try It!**

### **Examples and Practice**

Use the data above to answer the following question.

*How much money will each of the remaining shareholders get after liquidating the company?*

**exchanges**

*organizations established for the purpose of arranging the buying and selling of various companies' stocks*

**specialist**

*an employee responsible for recording all of the people who want to buy or sell a particular company's stock*

**buy limit order**

*the highest price at which an investor will purchase a specific stock*

**sell limit order**

*the lowest price at which an investor will sell a specific stock*

**market order**

*a buyer or seller agrees to purchase or sell at whatever price is available in the market*

**stockbroker**

*employee of a securities firm to whom orders to buy or sell stock are communicated*

**securities firm**

*a company where an account is maintained for the purpose of buying and selling stocks*

**floor broker**

*works on the stock exchange floor and communicates buy and sell directions with the specialist*

**transaction cost**

*fee paid to stockbroker for each trade he or she makes*

**online trading**

*using the Internet to buy and sell stocks*

**How are Stocks Traded?**

The largest stock **exchange** in the U.S. is the New York Stock Exchange (NYSE). Some firms belonging to an exchange employ people whose job it is to make a market in the stock of a particular company. This type of employee is known as a **specialist**. The pages of the specialist's books appear on the screens of computer monitors.

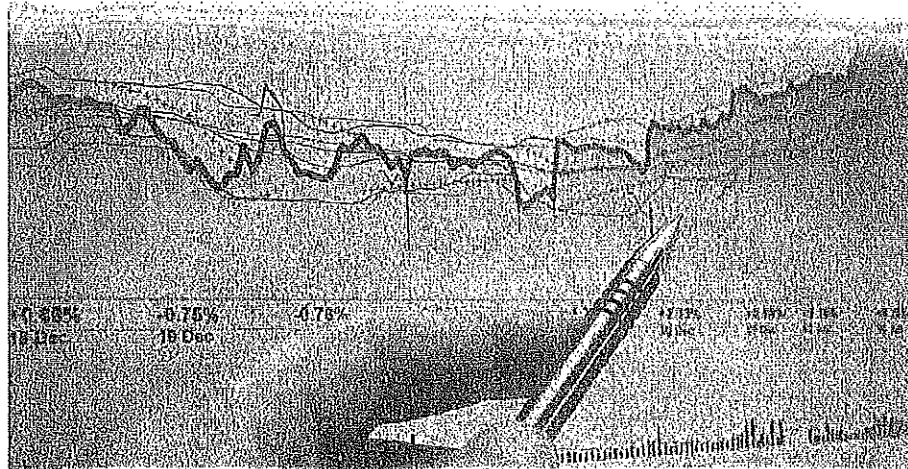
Next to each of the buyers' names in the specialist's book is the number of shares to be bought or sold. When placing an order, a buyer can indicate a **buy limit order**, **sell limit order** or **market order**. The specialist's job is to match up buyers and sellers so that orderly trading takes place and there are no big jumps in the price of the stock from moment to moment.

Individual investors do not deal directly with an exchange when buying and selling stocks. Instead, they deal with a **stockbroker** at a **securities firm**. In addition, many securities firms allow investors to submit buy and sell orders online via the Internet.

Traditionally, once an order to buy or sell shares of stock has been received by a securities firm, the order is sent to a **floor broker**. When the trade has been executed, the flow of communication reverses and the floor broker informs the specialist who then posts the results of the trade on the computer system for the stockbroker to see. The stockbroker then phones the investor with specific information about the price at which the shares were bought or sold. The investor pays a **transaction cost** for this service.

While many people use stockbrokers, the popularity of **online trading** has increased dramatically as more people have gained Internet access. This can be much less expensive than working with a stockbroker.

Each day thousands of investors place orders to buy and sell stocks for a particular company, causing almost continual change in the price of the stock. For example, when the exchange opens for trading in the morning, 10,000



shares of a particular company's stock may trade at a price of \$50 per share. The next trade in that stock may be for 5,000 shares at a price of \$50.25. The trade after that could be for 25,000 shares at \$49.75. Throughout the remainder of the trading day, the company's stock will be bought and sold many more times. The low price for the day could be \$48 per share and the high price for the day might be \$53 per share. You can see that the share price fluctuates, or changes, throughout the day as trades occur. The **last price** for the day could be the low price, high price or a price somewhere in between the two. Investors often discuss the **market value** of a stock, which is the current quoted price at which investors buy or sell a share of common stock.

**last price**

*the price of a specific stock at the time the market closes*

**market value**

*the last reported sale price or current bid/asking price for a particular stock*

In addition to the NYSE, there is another market-making mechanism by which huge volumes of stocks are traded every day called the over-the-counter (OTC) market. Securities firms that belong to the National Association of Securities Dealers (NASD) can use a computerized automatic quotation system for trading stocks that are not listed on an exchange. This is called the Nasdaq (National Association of Securities Dealers Automatic Quotation System). Members using the Nasdaq system indicate the prices at which they are willing to buy or sell various stocks. This information is put together for all NASD member securities firms. As a result, an orderly market for matching buyers and sellers exists.

### Interpreting Daily Stock Market Information

Major newspapers and many websites contain pages of information about the stock market. To simplify how this information is displayed, each company's stock is assigned a ticker symbol whether it trades on the NYSE or the Nasdaq. For example, the Ford Motor Company has F as its ticker symbol, while Microsoft is MSFT.

When reviewing daily stock performance in newspapers and online reports, investors can see the last price for the day and compare it to the high and low prices for the day, as well as the last price for the previous day. The rate quotes are in increments of one cent. Investors can also see how many shares of the stock were traded, the stock's average price over the past 52 weeks (year), and the stock's dividend yield. By studying this information, investors can determine the amount of risk and volatility associated with the stock.

Investors can also calculate the **annual dividend yield**. For example, if you had 100 shares of stock that paid a quarterly (every three months) dividend of \$1 per share, then you would earn \$400 because 100 shares of stock x \$1 quarterly dividend = \$100 x 4 (number of quarters in the year) = \$400 (total annual dividend earnings). To determine the annual dividend yield, you must know how much you paid for each share. If you purchased each share for \$150, then the shares cost you \$15,000. The total dividends of \$400 divided by the purchase cost of \$15,000 = approximately 2.67%, which would be the stock's annual dividend yield.

**annual dividend yield**

*the sum of the quarterly dividends paid for the year divided by the price per share of a particular stock*



### Examples and Practice

Answer the following questions using the formulas from the previous page and the scenario provided below.

You purchased 100 shares of stock for \$77.88 per share. You earn a quarterly dividend of \$.33 per share.

- How much will your quarterly dividend payment be?
- What is the total of the dividends you earn for the entire year?
- What is the annual dividend yield (%) for this stock?

**stock price index**  
*a measure of stock market  
performance*

### Stock Price Indices

Investors find it very useful to have an overall measure of the stock market's performance. A **stock price index** represents the combined price performance of a large number of stocks. There are several different stock market indices commonly used today; you can find them in the business sections of most daily newspapers and on Internet websites that post information about the financial markets.

The oldest and most widely recognized stock price measure is the Dow Jones Industrial Average, known as the "Dow" and quoted as DJIA. It is NOT a broad measure of the stock market, as it comprises only 30 "blue chip" stocks. Blue chip stocks are high quality stocks with a reputation for, and solid record of, stable earnings and dividend growth. Most of the Dow stocks are large industrial companies.

The S&P500 is a broad measure of stock market performance because it includes stocks from 500 different companies that represent all different sectors, not just large industrial companies. The Nasdaq Composite Index includes over 5,000 stocks that are traded on the Nasdaq market. Even though this index includes a large number of stocks, it is not as broadly representative as one might think, since many of the stocks are from the technology sector rather than a wide range of companies.

### Independent Practice

Using what you have learned about stocks, you will research a number of stocks and purchasing options. After completing your research, you will complete the mock purchase and sale of stocks over a one-month period and track each stock's activity. At the end of the month, you will study your investment choices and create a chart or graph illustrating the gains and losses on your investments. See the Stocks: Independent Practice Worksheet which you will receive from your teacher for specific details on completing the assignment.

# Building Your Future

## Chapter 3: Mutual Funds



### Did You Know....

The U.S. mutual fund market—with \$11.6 trillion in assets under management at year-end 2011—is the largest in the world, accounting for 49 percent of the \$23.8 trillion in mutual fund assets worldwide.

### Key Terms:

- Mutual fund
- Asset
- Asset allocation
- Asset mix
- Sales load
- No load
- Net investment
- Mutual fund share
- Net asset value
- Mutual fund family
- Year-to-date (YTD) percentage total return

### What You'll Learn

When investing, it is important to have a wide range of assets and to select them wisely; one commonly-purchased asset is the mutual fund. This chapter will discuss various types of mutual funds and the costs and benefits associated with each. In addition, you'll see how the ability to calculate costs and potential returns can assist you in making smart investment decisions.

### What is a Mutual Fund?

According to researchers, to achieve a high degree of diversification and minimize risk, you should have at least 15 different stocks in your portfolio. These stocks should be from a variety of different sized companies and industries. Since most of us are not experts on a wide range of industries and companies and do not have time to stay up-to-date on the strength and management of these companies, we often rely on subject matter experts to help us gather and understand this information.

### Career Link

*Financial analysts can be found throughout the financial industry, working for banks, insurance companies, and mutual funds and securities firms. Their role is to help people decide how to invest their money. In addition to having good people skills, math, computer and problem-solving skills are vital. Most financial analysts have a college degree in business, accounting, statistics or finance.*

**mutual fund**  
*a portfolio of many different  
investments managed  
by professionals and subject  
to laws and regulations  
designed to protect  
individual investors*

**asset**  
*anything you own  
to which a monetary value  
can be assigned*

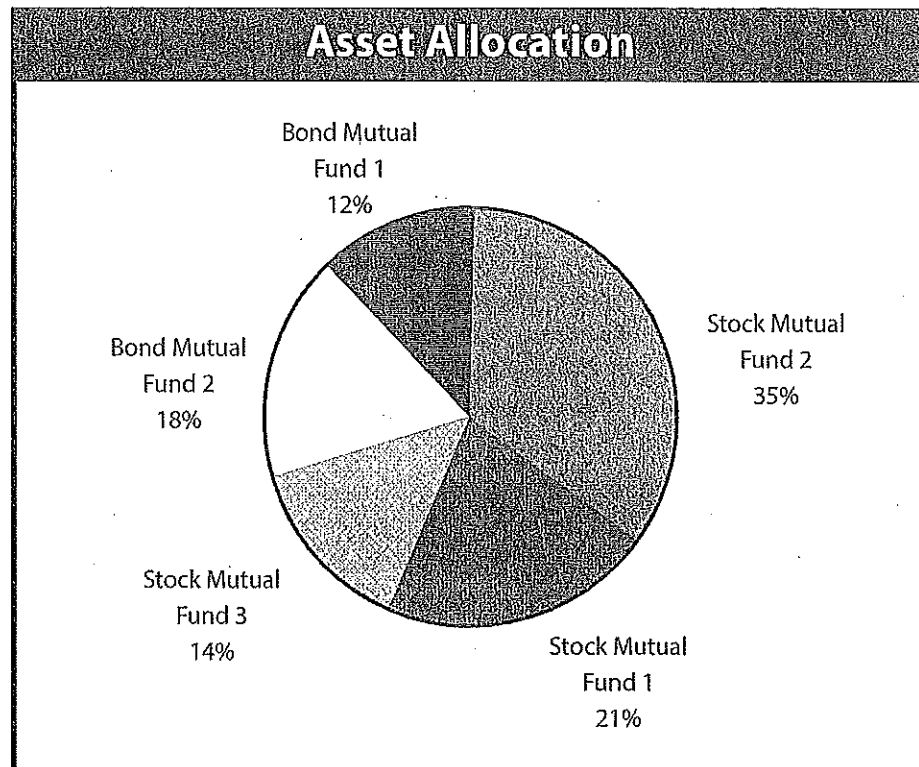
**asset allocation**  
*a way to divide investments  
to minimize risk and  
maximize returns*

**asset mix**  
*another term for  
asset allocation*

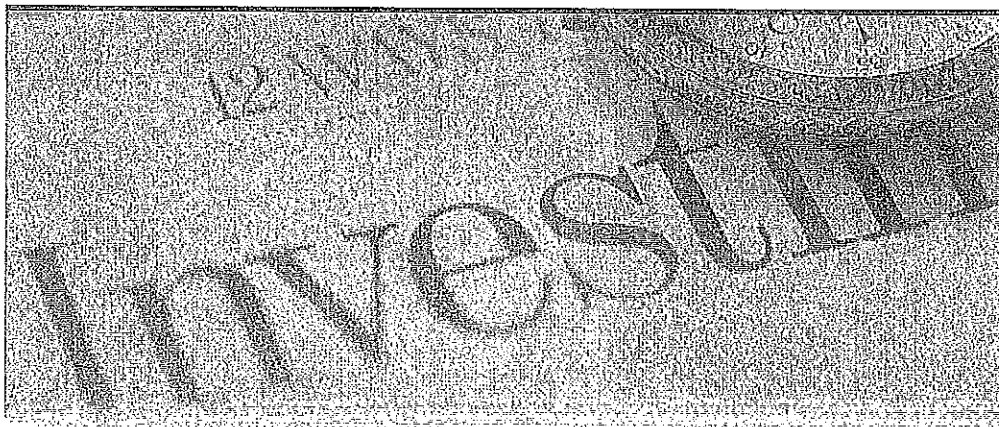
While most of us rely on experts to an extent, many investors are not comfortable giving up complete control of their investment portfolios to someone else. That is why **mutual funds** are so popular. Thousands of different mutual funds exist in the U.S. They can include stocks, bonds or both. Since individual investors can select the mutual funds they want to invest in and change the amount invested in these funds from time to time, they are able to maintain control over their investments.

The stocks and bonds in mutual funds are referred to as **assets**. When investors purchase mutual funds, they may choose to split their assets into different types of funds. They may choose to place 70% of the money into stock mutual funds and 30% into bond mutual funds. The 70% placed into stock mutual funds may be further split into specific stock funds: for example, 30% of the money might go into stock mutual fund 1, 50% might go into stock mutual fund 2, and 20% might go into stock mutual fund 3. The investor may then take the 30% of the money that is being used for bond mutual funds and divide it so that 40% goes into bond mutual fund 1 and 60% goes into bond mutual fund 2. This allows the investor to further diversify his or her investments. (See the Asset Allocation pie chart below.)

In the example presented, we would say that the investor's **asset allocation**, or **asset mix**, is 70% stocks and 30% bonds.







## Stock Funds and Bond Funds

There are many different types of stock and bond mutual funds. Each of these is likely to be made up of many different stocks or bonds. The tables below describe the most common types of stock and bond funds.

| Type of Stock Mutual Fund        | Typical Makeup of Fund  |
|----------------------------------|---|
| <b>Equity Growth Fund</b>        | Stocks of large companies for which future earnings are expected to have above-average growth relative to all companies in the marketplace              |
| <b>Equity Value Fund</b>         | Stocks of large companies for which investment analysts' models indicate that the stock prices should actually be higher than the current market prices |
| <b>Aggressive Equity Fund</b>    | Stocks of smaller and medium-sized companies for which future earnings are expected to have rapid growth  |
| <b>S&amp;P 500 Index Fund</b>    | Stocks of companies of all sizes; designed to mimic the combined performance of the S&P 500 Index   |
| <b>International Equity Fund</b> | Stocks of companies that are based outside of the U.S. and managed according to a "value" or "growth" style as described above                          |
| <b>European Equity Fund</b>      | Stocks of companies based in Europe and managed according to a "value" or "growth" style as described above   |
| <b>Asian Pacific Equity Fund</b> | Stocks of companies based in Asia and usually managed according to a "growth" style   |

| Type of Bond Mutual Fund               | Typical Makeup of Fund  |
|--|---|
| <b>U.S. Government Fund</b>            | Bonds issued by the U.S. federal government with maturities between one and 30 years  |
| <b>Fixed Income Fund</b>               | Bonds issued by the U.S. federal government and by high-quality U.S.-based companies with maturities between one and 30 years   |
| <b>High Yield Fund</b>                 | Bonds issued by lower-quality companies with unpredictable future earnings; these companies could experience losses that could cause the suspension or elimination of both the periodic coupon payments and repayment of the bond's face amount at maturity |
| <b>International Fixed Income Fund</b> | Bonds issued by foreign governments and companies   |

Since professionals manage these funds, there are various charges deducted each day from the market value of the assets in the mutual fund. These charges pay the cost of fund management activities such as selecting appropriate assets for the fund and adjusting the mix of assets each day. On an annual basis, total mutual fund charges generally range between 0.2% and 2% of the fund's market value. Bond mutual funds or stock index funds such as the S&P 500 typically have lower costs while the "value" and "growth" funds have higher costs.

**sales load**

*a fee charged when you invest in the mutual fund*

**no load**

*funds that do not require you to pay to invest*

**net investment**

*money placed in the fund after the sales load has been deducted*

Some funds charge a **sales load**. Today, most mutual funds are **no load** funds. The few that still charge for investing will use a percentage rate for calculating their fee. For example, if you want to invest \$1,000 in a fund that has an 8% sales load, then the **net investment** would be \$920 ( $\$1,000 \times 8\% = \$80$  sales load.  $\$1,000 - \$80$  sales load = \$920 net investment).



### Try It!

## Examples and Practice

- Which of the funds from the chart above seems the least risky? Most risky? Why?
- Why do you think "value" and "growth" funds might have a higher annual charge?
- If you wanted to invest \$500 in a mutual fund with a 4.75% sales load, how much would your net investment be?

## Net Asset Values

When you invest in a mutual fund, you do not directly own any of the individual shares of stocks or any of the individual bonds in the fund. Instead you own **mutual fund shares**.

**mutual fund share**  
a very small fraction of each individual stock or bond in the fund

The fund's **net asset value** is calculated at the end of each business day. To calculate net asset value, the market price of each individual asset (stock or bond) in the fund is determined. The fund's total market value is then calculated by adding the value of each individual asset in the fund. The daily amount of total expense charges is deducted from the total market value to give the net market value of the fund. The net market value is then divided by the total number of mutual fund shares owned by all investors in the fund.

**net asset value**  
the price at which you can buy or sell one share of the mutual fund

In print and online publications that publish information about the financial markets, you can find important information about mutual funds in mutual fund quotation tables. These tables are typically arranged by **mutual fund family**. The tables include information about the daily change in net asset value as well as the **year-to-date (YTD) percentage total return**.

**mutual fund family**  
a number of different mutual funds that are all run by professionals associated with a specific company

**year-to-date (YTD) percentage total return**  
the mutual fund's gains/losses over the past year

### Try It!

## Examples and Practice

Use the data below to calculate the net asset value of the mutual fund.

- The fund has 20 million shares
- The market value of all the assets of the growth stock mutual fund is \$300 million at the end of the business day
- The daily expense rate for the fund is 0.004%, or 1.46% annually
- What is the net asset value of one share of this mutual fund?
- How much would it cost you to buy 100 shares of this no load fund?

## Independent Practice

Create a mutual fund investment portfolio using what you have learned about risk and diversification. Calculate your gains and losses over a 30-day period. Use the **Mutual Funds: Independent Practice Worksheet** which you will receive from your teacher to complete this project.



# Building Your Future

## Chapter 4: Risk and Diversification



### Did You Know....

A portfolio of 20-30 securities generally will be less risky than a portfolio holding only one or two securities.

### Key Terms:

- Risk
- Fluctuations
- Long-term trend
- Upward trend
- Price return
- Dividend return
- Diversify
- Positive correlation
- Uncorrelated

### What You'll Learn

When investing, you should know how much you can afford to risk and what types of investments pose the highest risks. By studying long-term trends and learning how financial markets change, you will gain a greater understanding of why spreading your money among a range of investments is important.

### Financial Risk

When people think about risk, they think about something bad that can happen. However, when we think about **risk** in terms of financial markets and investments, we must consider how much money we can afford to lose and the minimum amount of return we can stand to earn on an investment.

**risk**  
*likelihood of suffering losses  
or earning less than expected  
on financial investments*

When people invest money, the financial outcome is uncertain; stock market **fluctuations** are often difficult to predict. Following are some common financial and investment risks:

**fluctuations**  
*changes in stock prices*

- Stock prices could decline sharply
- Interest rates could rise, causing the value of bonds to fall

### Career Link

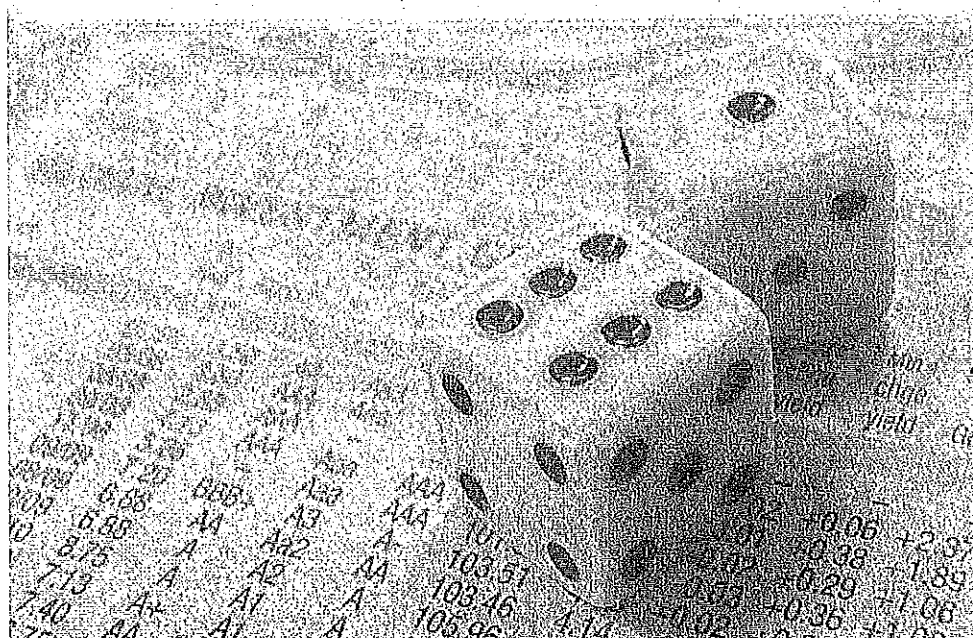
*Explaining what an actuary does would not be complete without also explaining risk itself. Risk comes in many forms. Examples include the risk of losing one's home or car to a hurricane or an accident, or the risk of losing one's income due to disability or death. Every person and organization faces risk. As experts in measuring and managing risk, actuaries fill a significant need in our society. If the risk management programs actuaries develop didn't exist, our economy would not be able to grow as it does.*

- A borrower could be unable to repay his or her loan
- A weak foreign government could default on its bonds and not repay the face amount at maturity
- A credit card holder could declare personal bankruptcy and not pay off his or her outstanding balance
- The prices of things you need or want to buy could become more expensive, causing your savings and investments to become insufficient
- State and federal governments could raise taxes that will eat into the total returns on your investments

Most people do not like to take large risks with their money; they certainly do not like to take large risks with ALL of their money. Generally, the prices at which you can buy various investments, and their expected rate of return, reflect the riskiness of the investments. The riskier the investment, the greater the total return you expect to get from it, or you simply would not choose to make the investment.

No one knows for sure how stock prices will change from day to day, week to week, or year to year. Many experts have done research in an attempt to unlock the secrets of the stock market as a means of making lots of money. What we can say with confidence is that a very large part of the changes in stock prices during any given period of time are random, meaning they occur by chance and are not predictable.

Stock analysts spend a great deal of time carefully studying individual companies in the hopes of picking the winners—the companies that will





consistently have strong and growing profits. Stock analysts and investment strategists believe that there is a lot that is predictable about the **long-term trend** in the stock price of a company with steadily growing profits.

**long-term trend**  
*what happens  
to an investment  
over a period of several years*

When experts study stock prices, they look at trends. Stock analysts try to determine which companies' stocks will have the greatest **upward trend** over a long period of time. They'll recommend that investors buy those stocks.

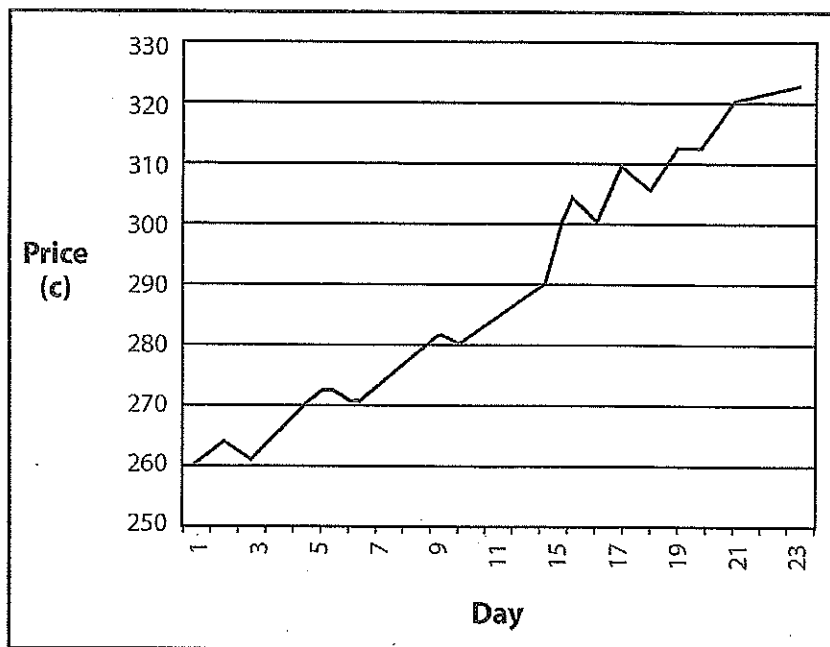
**upward trend**  
*the tendency for a stock price  
to rise over time*

Over a period of time, a stock's total return has two parts: the **price return** and the **dividend return**. If we were to study a stock over a three-month period and see an average price return of 2.5% during that time, that time period would be referred to as the stock's upward price trend. Therefore, an upward trend means that a stock has a positive average in terms of its price return.

**price return**  
*change in a stock's price*

**dividend return**  
*stock dividends received*

Study the chart below. Notice that the price changes each day. Some days the price goes up, and some days the price drops. However, if you study the overall price from Day 1 through Day 23, you will notice that despite some decreases, the overall price is higher on Day 23 than it was on Day 1. This is a visual illustration of what an upward price trend could look like.

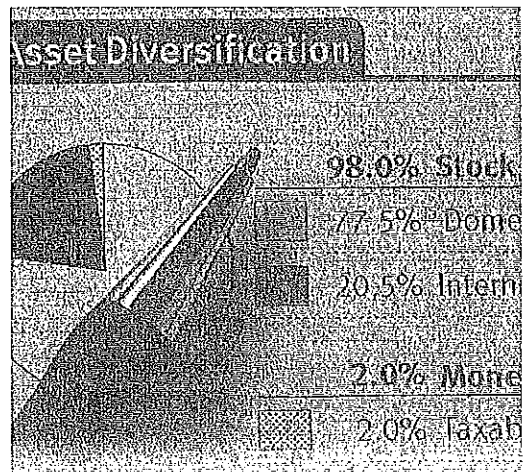


### Diversifying Your Investments

Due to the risks associated with investing, you should avoid "putting all of your eggs in one basket." Simply stated, you do not want to invest all of your money in one specific investment. To do so would mean taking on the risk of losing all of your money if the investment failed. Most investors choose to **diversify**. This way you can reduce the risk of experiencing serious financial losses. For example, if you wanted to diversify your investments, you might

**diversify**  
*put money into  
a variety of investments*

buy stocks, bonds, and mutual funds, and put some money into a savings account. This way, if one investment incurs losses, the others could potentially continue to increase, minimizing the amount of money you risk losing. Your level of risk reduction depends on how differently the various investment instruments behave. In other words, the stock prices may rise, but the interest rate on your savings account may fall.



**positive correlation**  
the tendency of stock prices to move up or down together

When considering investment strategies, it helps to understand the concept of **positive correlation**. For example, if a securities firm expert issues a report saying computer hardware companies are going to make less money than anticipated, this news is likely to send the prices of all technology stocks down.

**uncorrelated**  
investments which have no relationship to the performance of other investments

On the other hand, there are times when investment performance is **uncorrelated**. For example, if you own stock in a company that produces engines for a specific type of airplane, and its customer decides to discontinue purchasing that model, chances are the stock price for the engine-producing company will fall. However, that does not mean the prices for all stocks will fall. In other words, there is no correlation, or connection, between the airplane engine company's stock and other stocks you might own, such as a stock in a pharmaceutical company.

## Independent Practice

You will select stocks from various market sectors and study their performance over a given time period. Using that data along with the Risk and Diversification Independent Practice Worksheet you will receive from your teacher, look for stock trends and examples that illustrate the importance of diversification as a means of reducing risk.

# Building Your Future

## Chapter 5: Inflation



### Did You Know....

The U.S. and other developed countries have much lower rates of inflation (typically 1.0% to 4.0%; the U.S. is at 2.9%) than developing countries such as Argentina (25%), Syria (33.6%), and South Sudan (79%).

### Key Terms:

- Disposable income
- Inflation rate
- Price series
- Bureau of Labor Statistics
- Consumer Price Index/CPI
- Market basket of goods and services
- Purchasing power
- Capital gains

### What You'll Learn

Focusing on the cost of day-to-day living, you will learn what inflation is, the factors that affect inflation, how inflation is measured and the effects of inflation on consumers and the U.S. economy. By focusing on the various goods and services that comprise the Consumer Price Index (CPI), you will see how inflation affects purchasing power and the connection between the inflation rate and investment returns.

### Calculating the Inflation Rate

Each year, it may seem that your **disposable income** buys less and less as the cost of goods and services grows. Everything from food, clothing and gasoline to books, movie theater tickets and video games seems to cost more than it did last year.

**disposable income**  
the amount of money you  
have left for spending or  
saving after you pay taxes

Calculating the **inflation rate** is not difficult. Let's look at the price of t-shirts at a local clothing store to see how the inflation rate is calculated into an annual percentage. Assume that you purchased a t-shirt in August 2012 for \$12.99. When you returned in August 2013 and purchased the same shirt for a friend, the cost was \$13.99. Over the course of one year, the cost of the shirt increased by \$1.00. To determine the inflation rate, you simply take the increase in price

**inflation rate**  
the annual percentage  
increase in the prices of goods  
and services

### Career Link

When people plan for retirement, they calculate how much money they will need well into the future. Social Security is a key consideration for many, and actuaries have been deeply involved in looking at the financial soundness and ideal structure of that system, with the inflation rate playing a central role in determining how much money will be needed to cover cost of living adjustments.

of \$1.00 and divide it by the original price of the shirt, which was \$12.99, for a percentage increase of 7.7%. If you wanted to continue the calculation at the same annual rate of inflation to project the cost in upcoming years, then you would simply multiply the most current cost (\$13.99) by 7.7%. This would show an increase in price of \$1.08, making the cost of a t-shirt in 2014 \$15.07.

**price series**  
uses a set inflation rate  
along with actual prices  
to determine the hypothetical  
price of the same  
goods/services in the future

If you developed a **price series**, then the following numbers would reflect the prices for the years 2012-2019: \$12.99, \$13.99, \$15.07, \$16.23, \$17.48, \$18.83, \$20.28 and \$21.84. When using this example, it is important to remember that the prices for the first two years, 2012 and 2013, are the only actual prices since these were purchases that were already made. All of the other amounts are hypothetical prices based on the assumption that the inflation rate of 7.7% calculated in 2013 would continue forever into the future.



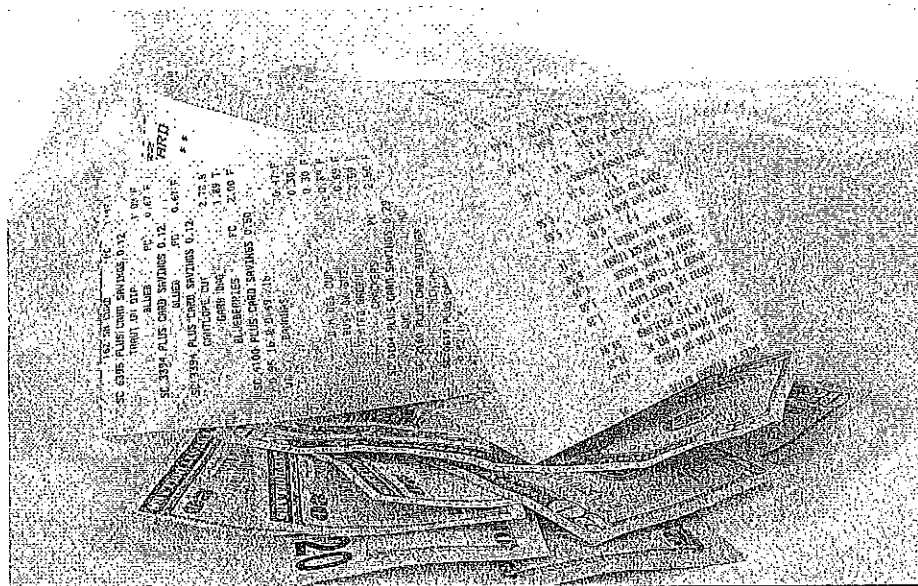
### Examples and Practice

Use the data below to calculate the inflation rate and price series for a pair of jeans purchased at your favorite store. Assume that you return to the same store and purchase the exact same brand and style of jeans each year. You can use a spreadsheet or calculate the numbers on paper.

2012 purchase price: \$75.00

2013 purchase price: \$88.75

- What is the inflation rate for these jeans?
- If that inflation rate remains consistent, how much will the jeans cost in 2014, 2015, 2016, and 2017?
- Which years reflect actual prices? Hypothetical prices?



## The Consumer Price Index

All of us are consumers, and the amount of money we pay for various goods and services affects everyone. **The Bureau of Labor Statistics** (<http://www.bls.gov>) publishes an important overall measure of price inflation called the **Consumer Price Index (CPI)**. The government calculates the CPI based on the combined price of a **market basket of goods and services**. The eight major categories considered for the CPI, along with examples of items found in those categories, are:

- Food/Beverages: breakfast cereal, milk, coffee, chicken, wine, full service meals, snacks
- Housing: rent of primary residence, owners' equivalent rent, fuel oil, bedroom furniture
- Apparel: men's shirts and sweaters, women's dresses, jewelry
- Transportation: new vehicles, airline fares, gasoline, motor vehicle insurance
- Medical Care: prescription drugs and medical supplies, physicians' services, eyeglasses and eye care, hospital services
- Recreation: televisions, toys, pets and pet products, sports equipment, admissions (tickets to events, movies, etc.)
- Education/Communication: college tuition, postage, telephone services, computer software and accessories
- Other Goods and Services: tobacco and smoking products, haircuts and other personal services, funeral expenses



### **Bureau of Labor Statistics**

*division of the  
U.S. Department of Labor  
that calculates the  
Consumer Price Index*

### **Consumer Price Index/CPI**

*a monthly price series  
showing the inflation rate for  
a market basket of  
goods and services*

### **market basket of goods and services**

*Items that people typically  
spend money on including  
food, housing, clothing,  
transportation, medical care,  
recreation, education,  
communication and  
miscellaneous goods  
and services*

No individual or family in the U.S. spends money exactly the way that the CPI's market basket of goods and services shows. The CPI is intended to give a good indication of how people who live in cities across the entire country spend their money. Therefore, the CPI can be an indicator of how the average city-dwelling family in the U.S. spends its money. By tracking the CPI, people can compare how much more money they spend each year to buy the same market basket of goods and services. To better understand their own spending patterns, investors can customize a market basket of goods by tracking the monthly or yearly prices of the items that they spend money on.

## Investment Returns vs. Inflation

Why is it important for investors to understand inflation? Let's suppose that an investor's customized basket of goods and services costs \$1,000 at a particular point in time. Let's also suppose that he or she invests \$1,000 at that same point in time in a portfolio of stocks and bonds. One year later, assume that the same market basket of goods now costs \$1,050. In other words, the annual inflation rate was 5%. The investor will still be able to buy the market basket of good and services if his or her portfolio is worth at least \$1,050. However, if the portfolio is worth less than \$1,050, the investor won't have enough money to buy the entire basket of goods and services. In this example, unless the annual total return on the investment portfolio is at least 5%, the investor's portfolio will be insufficient.

**purchasing power**  
*the value of money based on  
the amount and quality of  
goods and services it can buy*

The key objective for investors is to establish a portfolio of assets that earns an average annual return that is equal to or greater than the average annual inflation rate. If the investor fails to achieve that objective, the portfolio will lose part of its **purchasing power**. As investors, it is important to understand that it is unrealistic to believe that a portfolio will be able to beat the inflation rate every year. However, over an extended period of time (five years or more), the portfolio's average annual total return must exceed the average annual inflation rate so it does not lose purchasing power.

**capital gains**  
*profits earned from  
the sale of an asset  
such as a stock*

Individual investors pay taxes each year on the interest and dividends received on investments. If the investor sells the portfolio assets, he or she will also pay taxes on any **capital gains**.

For the portfolio to maintain its purchasing power, the total return after taxes like the capital gains tax must exceed the inflation rate. The challenge faced by many investors is to consistently earn total returns after these taxes are subtracted that at least match the inflation rate, particularly when inflation rates are high.

### Independent Practice

Customize a market basket of goods and services and see how the prices of these items could be affected by inflation. Use the Inflation: Independent Practice Worksheet that you will receive from your teacher to complete the activity.



## Building Your Future

### Appendix: Online Resources



Below you will find a list of additional resources related to the chapters in this book. These resources can be used to extend your understanding and study of the subjects in each section.

#### Chapter 1: Bonds

##### **Treasury Direct**

Find information about U.S. government bonds and ways to purchase them.

<http://www.savingsbonds.gov/>

##### **Library of Economics**

Provides detailed articles about bonds and the various types available for investment.

<http://www.econlib.org/library/Enc/Bonds.html>

#### Chapter 2: Stocks

##### **The Stock Market**

Provides basics about the history of the stock market, picking and tracking stocks, market trends, and a glossary of stock market terminology.

<http://library.thinkquest.org/3088/stockmarket/introduction.html>

#### Chapter 3: Mutual Funds

##### **U.S. Securities and Exchange Commission**

Get information about important factors to consider when investing, common pitfalls, a mutual fund fee calculator, and a glossary of terms

<http://www.sec.gov/investor/pubs/inwsmf.htm>

#### Chapter 4: Risk and Diversification

##### **U.S. Securities and Exchange Commission**

Get tips and information about ways to minimize risk through diversifying investments

<http://www.sec.gov/investor/pubs/assetallocation.htm>

#### Chapter 5: Inflation

##### **Bureau of Labor Statistics**

Provides documentation about the CPI, inflation calculators, and statistics and information related to inflation

<http://www.bls.gov>

**Statement on Course Materials**

In order to stay current with the fast-paced business world, teachers use a wide variety of articles, case studies, interviews and videos in addition to/in place of a traditional textbook. This allows the teacher to ensure that students are learning about content that is relevant, and it also allows the teacher to differentiate in a way that will engage their classes to the highest degree, while aligning the instruction to the curriculum. For example, in a marketing class the a curriculum unit might include “promotional strategies of brands” but the specific examples change year to year: Facebook advertising in 2012, Instagram advertising in 2013, Snapshot in years to come. It would impossible for a textbook to keep pace with the business world, especially within the technology sector. Many of our teachers subscribe to news subscriptions and other sources to stay current,

In order to accommodate our “hands-on” atmosphere, information may be presented in a PowerPoint or handout which is then applied to a hands-on simulation or project. Instead of simply memorizing terms and reading about concepts, students are given the opportunity to immediately apply these concepts to a simulation or to their own ideas. This type of experiential learning has proven very successful for us and also shows a high retention of knowledge in our students. This type of learning also aligns more closely with 21<sup>st</sup> century skills, by asking students to formulate ideas, innovate, and problem solve rather than simply read and remember.

**Introduction to Business**

- Introduction to Business – Glencoe

**Marketing**

- Marketing Essentials – Glencoe

**Financial Literacy**

- Becoming Money Smart: A Simulation for Financial Decision Making – Goodheart Wilcox

**Accounting**

- Accounting – Century 21 Accounting, 10th edition. Gilbertson, Lehman and Gentene

**Business Law**

- Understanding Business and Personal Law – Glencoe

**Business Management**

- Principles of Business Management – Thompson/Southwestern
- Business Management: Real World Applications & Connections by Rue

**The Business of Sports & Entertainment**

- Sports & Entertainment Marketing – Glencoe

**AP Economics**

- AP Economics-Economics, 18th edition. McConnell, Brue and Flynn

#### Advanced Advertising & Design

- Advertising: Concept & Copy: Second Edition – George Felton
- Advertising & Sales Promotion: 13<sup>th</sup> edition - Kaser

#### Entrepreneurship

- Entrepreneurship Ideas in Action – Thompson Southwestern
- Junior Achievement Company Program Book

#### Internship & Career

- Succeeding in the Work place – Glencoe
- JA Success Skills Student Guide

#### Introduction to Investing

- Supplemental Cases and Readings

#### Computer Information Systems

- Microsoft Office 2010 – Cengage Learning

#### Computer Game Design & Programming

- Getting Started with Game Maker - Jerry lee Ford - Course Technology CenGage Learning
- Programming in Visual Basic 2010 – Bradley/Milspaugh

#### Robotic Programming

- ROBOTC Curriculum for LEGO MINDSTORMS Education with TETRIX, Product ID: W5003306
- MINDSTORMS Education Robotics Engineering I: Introduction to Mobile Robotics, Product ID: W5003291
- MINDSTORMS Education Robotics Engineering II: Guided Research, Product ID: W5003292

#### Web Design

- The Web Collection revealed: Adobe Dreamweaver CS5, Flash CS5, and Fireworks CS5 - Delmar Cengage Learning, Bishop, Sherry; Shuman, Jim; Waxer, Barbara M.

#### AP Computer Science

- Fundamentals of Java: AP\* Computer Science Essentials for the A Exam –third Edition, Lambert/Osbourne
- ICT APCS Java Curriculum (<http://fairfieldschools.org/apps/zhitomi/apcs/index.html.html>)

## Computer Information Systems Web Design

|   |   |   |
|---|---|---|
| <p><b>Description</b></p> <p>The purpose of this course is to increase the understanding of technology and use of the Internet. Effective and efficient web pages need to be carefully planned in order to make them clear and attractive. In this course, students will be exposed to web page design through utilizing HTML and the Adobe Web Development Suite (Dreamweaver, Flash, Fireworks and Photoshop).</p>                            |   |   |
| <p><b>Course Overview</b></p>   |   |   |
| <p><b>Course Goals</b></p> <p>Students will be able to</p> <ul style="list-style-type: none"> <li>Describe different career opportunities in the internet industry.</li> <li>Distinguish between a good and bad web site.</li> <li>Create a web page using HTML</li> <li>Include and manipulate images in a web site</li> <li>Create and include animation in a web site.</li> <li>Create a web site using web development software.</li> </ul> | <p><b>Essential Questions</b></p> <ul style="list-style-type: none"> <li>What education and background is required for a career in the computer industry?</li> <li>What components are involved in a web site and how do they work?</li> <li>How does graphics affect website design?</li> <li>What are the technologies used to create websites?</li> <li>How does one produce a website?</li> </ul>   | <p><b>Assessments</b></p> <p>Common Assessments</p> <p>Student Web Site Projects</p> <p>Skill Assessments</p> <p>Projects</p> |
| <p><b>Content Outline</b></p> <p>Unit 1 – Careers in web development.</p> <p>Unit 2 – Understanding HTML basics and creating a web page in HTML.</p> <p>Unit 3 – Editing and Incorporating graphics into a web page using Adobe Fireworks/Photoshop software.</p> <p>Unit 4 – <b>Editing and Incorporating Animations Into a Web Site</b></p> <p>Unit 5 – Create full functioning web sites.</p>  | <p><b>Standards</b></p> <p><u>State of Connecticut Curriculum Frameworks</u></p> <p>Connecticut State Standards are met in the following areas:</p> <ul style="list-style-type: none"> <li>Analyze elements of a problem to develop creative solutions.</li> <li>Create ideas, proposals, and solutions to problems</li> <li>Use information technology skills for lifelong learning.</li> <li>Design, develop, and deliver advanced web content and applications using web design programs.</li> </ul> <p>21st Century Skills/International Society for Technology in Education</p> <p>National Business Education Association (NBEA) – Information Technology</p> |   |

## Pacing Guide Semester 1

| 1st Marking Period                                    |  |   |   | 2nd Marking Period   |         |         |
|---|--|---|---|--|---------|---------|
| Month 1   |  | Month 2   |   | Month 3  | Month 4 | Month 5 |
| Unit 1<br>Introduction to web site careers<br>2 weeks | Unit 2<br>Creating a web page in HTML<br>2 weeks | Unit 3<br>Editing and Incorporating graphics in a web site using Adobe Fireworks<br>4 weeks | Unit 4<br>Editing and Incorporating Animations Into a Web Site<br>4 weeks | Unit 5<br>Creating web sites using Adobe Dreamweaver software<br>8 weeks |         |         |



## Unit 1 - Introduction to computer careers, 2 weeks

### Standards

Connecticut State Standards are met in the following areas:

- Analyze elements of a problem to develop creative solutions.
- Create ideas, proposals, and solutions to problems
- Use information technology skills for lifelong learning.
- Design, develop, and deliver advanced web content and applications using web design programs.

21st Century Skills/International Society for Technology in Education1.

1. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks.
2. Work independently and collaboratively to solve problems and accomplish goals.
3. Communicate information clearly and effectively using a variety of tools/media in varied contexts for a variety of purposes.

NBEA – Information Technology

Explore positions and career paths in information technology.

| Unit Objectives  | Focus Questions  | Assessment                            |
|--|--|---------------------------------------|
| <p>Students will</p> <ul style="list-style-type: none"> <li>• Define different careers associated with computers.</li> <li>• Define the requirements and education necessary for these careers.</li> </ul>   | <ul style="list-style-type: none"> <li>• What challenges do computer professionals face in today's world?</li> <li>• What will the computer industry look like in 10 years?</li> </ul> | <p>Introductory Summative Project</p> |
| <h3>Skill Objectives</h3> <p>Students will</p> <ul style="list-style-type: none"> <li>• Use analytical skills and support conclusions with specificity.</li> <li>• Access and research information using the Internet.</li> <li>• Display creative thinking, problem solving, and decision making.</li> <li>• Organize and maintain files.</li> <li>• Use computers to process information.</li> </ul> |  |                                       |
| <h3>Technology Resources</h3> <ul style="list-style-type: none"> <li>• Computers</li> <li>• Software: word processing, spreadsheet, presentation</li> <li>• Projector or Interactive Whiteboard</li> </ul>   | <h3>Suggested Materials/Resources</h3> <ul style="list-style-type: none"> <li>• Online Career Databases</li> </ul>   |                                       |

## Unit 2 Creating a Web Page in HTML, 2 weeks

### Standards

#### 21st Century Skills/International Society for Technology in Education

1. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks.
2. Work independently and collaboratively to solve problems and accomplish goals.
3. Communicate information clearly and effectively using a variety of tools/media in varied contexts for a variety of purposes.

#### NBEA – Information Technology

1. Use various input technologies to enter and manipulate information appropriately.
2. Achievement Standard: Analyze and design information systems using appropriate development tools.
3. Design, develop, test, and implement programs.

| Unit Objectives  | Focus Question  | Assessments   |
|--|---|---|
| Students will <ul style="list-style-type: none"> <li>• Use HTML Basics</li> <li>• Use HTML organization techniques</li> </ul>  | <ul style="list-style-type: none"> <li>• What is HTML (HyperText Markup Language) and why is it important to know how to interpret it?</li> <li>• Why are the HTML tags needed to create a web page?</li> </ul> | <ul style="list-style-type: none"> <li>• Written assessments</li> <li>• Projects</li> </ul> |
| <h3>Skill Objectives</h3> <p>Students will</p> <ul style="list-style-type: none"> <li>• Be able to create and test web page using HTML.</li> </ul>   |   |   |
| <h3>Technology Resources</h3> <ul style="list-style-type: none"> <li>• Computers</li> <li>• Software: word processing, spreadsheet, presentation</li> <li>• Projector or Interactive Whiteboard</li> </ul> | <h3>Suggested Materials/Resources</h3> <p>Various online sites<br/>Text book</p>  |   |



## Unit 3 Editing and Incorporating Graphics in a Web Site Using Adobe Fireworks

### Standards

#### 21st Century Skills/International Society for Technology in Education

1. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks.
2. Work independently and collaboratively to solve problems and accomplish goals.
3. Communicate information clearly and effectively using a variety of tools/media in varied contexts for a variety of purposes.

#### NBEA – Information Technology

1. Design, develop, test, and implement programs.

| Unit Objectives   | Focus Questions  | Assessments                            |
|---|--|--|
| <p>Students will</p> <ul style="list-style-type: none"> <li>Understand how to navigate around the Adobe Fireworks editor.</li> <li>Import, select and modify graphics.</li> <li>Add text and shapes to images.</li> <li>Work with layering and filtering to an image.</li> <li>Import images into a web site</li> </ul>   | <ul style="list-style-type: none"> <li>How does the Adobe Fireworks/ Photoshop editor edit images?</li> <li>What role does graphics play in the creation of a web site?</li> <li>Can there be too much graphics in a web site?</li> <li>How would text on an image enhance the image?</li> </ul> | <p>Written assessments<br/>Project</p> |
| <p><u>Skill Objectives</u></p> <p>Students will</p> <ul style="list-style-type: none"> <li>Work with layering and filtering to an image</li> <li>Import images into a web site</li> <li>Know how to adjust the color/brightness, cropping, editing image</li> <li>Add text and use filters such as (skew tool, distort tool, and the pen tool)</li> <li>Use shapes tools to create various objects</li> <li>Learn to use the Button symbol feature to create buttons with rollover</li> <li>Effects and pop-up menus for a webpage</li> </ul> |  |  |
| <p><u>Technology Resources</u></p> <ul style="list-style-type: none"> <li>Computers</li> <li>Software: word processing, spreadsheet, presentation</li> <li>Projector or Interactive Whiteboard</li> <li>Adobe Web Development Suite</li> </ul>  | <p><u>Suggested Materials/Resources</u></p> <p>Textbook</p> <p>Various internet web sites</p>  |  |

## Unit 4 – Editing and Incorporating Animations Into a Web Site

### Standards

#### 21st Century Skills/International Society for Technology in Education

1. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks.
2. Work independently and collaboratively to solve problems and accomplish goals.
3. Communicate information clearly and effectively using a variety of tools/media in varied contexts for a variety of purposes.

#### NBEA – Information Technology

1. Design, develop, test, and implement programs

| Unit Objectives   | Focus Questions  | Assessments   |
|---|--|---|
| <p>Students will</p> <ul style="list-style-type: none"> <li>• Work with symbols and interactivity</li> <li>• Work with a timeline.</li> <li>• Create a motion tween animation</li> </ul>  | <ul style="list-style-type: none"> <li>• How does the Animation editor create tween movies?</li> <li>• Why are Animation objects added to a web site?</li> <li>• How would symbols enhance a web site?</li> <li>• Are all video movies on a timeline?</li> <li>• What is the difference between fixed and tween animations?</li> </ul> | <ul style="list-style-type: none"> <li>• Written assessments</li> <li>• Projects</li> </ul> |
| <p><u>Skill Objectives</u></p> <p>Students will</p> <ul style="list-style-type: none"> <li>• Navigate around the Animation editor</li> <li>• Work with symbols and interactivity</li> <li>• Work with a timeline.</li> <li>• Create a motion tween animation</li> </ul>                       |  |   |
| <p><u>Technology Resources</u></p> <ul style="list-style-type: none"> <li>• Computers</li> <li>• Software: word processing, spreadsheet, presentation</li> <li>• Projector or Interactive Whiteboard</li> <li>• Web Development Software</li> <li>• Javascript, Flash and/or HTML5</li> </ul> | <p><u>Suggested Materials/Resources</u></p> <p>Textbook</p> <p>Various internet web sites</p>  |   |

## Unit 5 – Creating and Editing Web Sites in Adobe Dreamweaver

### Standards

#### 21st Century Skills/International Society for Technology in Education

1. Use real-world digital and other research tools to access, evaluate and effectively apply information appropriate for authentic tasks.
2. Work independently and collaboratively to solve problems and accomplish goals.
3. Communicate information clearly and effectively using a variety of tools/media in varied contexts for a variety of purposes.

#### NBEA – Information Technology

1. Design, develop, test, and implement programs

| Unit Objectives  | Focus Questions   | Assessments  |
|--|---|--|
| <p>Students will</p> <ul style="list-style-type: none"> <li>• Navigate around the Adobe Dreamweaver editor</li> <li>• Plan and set up web site</li> <li>• Add folders and pages to create a website</li> <li>• Create an index page</li> <li>• Create links to internal and external pages</li> <li>• Create and include a navigation bar on each page</li> </ul>  | <ul style="list-style-type: none"> <li>• How does the Dreamweaver editor create web sites?</li> <li>• Why do some web sites look better than others?</li> <li>• Where is all the web site information stored?</li> <li>• What is the main page on a web site called?</li> <li>• How does one web site connect with another web site?</li> <li>• How are web pages connected?</li> </ul> | <p>Written assessments<br/>Projects<br/>Student Web Site Project</p> |
| <p><b>Skill Objectives</b></p> <p>Students will</p> <ul style="list-style-type: none"> <li>• Understand how to navigate around the Adobe Dreamweaver editor</li> <li>• Plan and set up web site</li> <li>• Add folders and pages</li> <li>• Create an index page</li> <li>• Create links to internal and external pages</li> <li>• Create and include a navigation bar on each page</li> <li>• Duplicate pages, add font, insert and align images</li> </ul> |   |  |
| <p><b>Technology Resources</b></p> <ul style="list-style-type: none"> <li>• Computers</li> <li>• Software: word processing, spreadsheet, presentation</li> <li>• Projector or Interactive Whiteboard</li> <li>• Web Development Software</li> </ul>  | <p><b>Suggested Materials/Resources</b></p> <p>Text book<br/>Various internet web sites</p>   |  |

Osborn Hill Building Committee  
Sullivan Independence Hall  
725 Old Post Road, First Floor Conference Room  
Fairfield, CT 06824  
December 19, 2013  
7:00 p.m.

**DRAFT MINUTES**

Members Present: Brett Bader, William Dunn, Kim Marshall, Susan Cardona  
Members Absent: Steve White

Others Present: Jessica Gerber (BOE), Phil Ryan, Sal Morabito, Judy Ewing

**I. Call to Order:**

Kim Marshall, Chairman, called the meeting to order at 7:04 p.m.

**II. Approval of November 21, 2013 Meeting Minutes .....**

Ms. Marshall asked for comments or questions regarding the November minutes. There were no comments. Susan Cardona made a motion to approve the November meeting minutes. Brett Bader seconded the motion.

**The motion passed unanimously: 4:0**

**III. Outstanding Invoices:**

Ms. Marshall distributed copies of invoices for review and discussion.

- A. Wm. B. Meyer – Invoice COM-1252-3/2 , for \$200 for pickup of rented library carts
- B. Wm. B. Meyer – Invoice COM-1252-3/1, for September Library Cart rental \$1250.00

Mr. Dunn made a motion to approve the above referenced invoices. Ms. Cardona seconded the motion.

**The motion passed unanimously: 4:0**

- C. Tecta – Invoice S1020200 for \$1285.32 for emergency to seal rubber around skylight.

Kim Marshall made a motion to approve the Tecta invoice. Ms. Cardona seconded the motion.

**The motion passed unanimously: 4:0**

- D. Silver/Petrucelli - Invoice 13-2039 for \$1597.50 representing construction documents (5% of \$11,250 line item on the invoice.)

Mr. Dunn made a motion to approve the Silver Petrucelli invoice. Mr. Bader seconded the motion.

**The motion passed unanimously: 4:0**

**IV. Update from Architect – The architect was not present.**



#### **V. Nomination of Committee Members:**

Ms. Marshall called for nominations of committee members for 2014. No names were presented for consideration. A discussion ensued and the current members agreed to continue their current positions on the committee.

Ms. Cardona made a motion to approve the committee members as presented. Mr. Bader seconded the motion.

**The motion passed unanimously: 4:0**

#### **VI. New Business:**

Ms. Marshall proposed to set the 2014 meeting schedule on the third Thursday of each month during 2014. The committee members and the other present parties concurred.

The following schedule was set for 2014 at 7:00 p.m. at Independence hall, unless a change of venue is necessary, which will be determined at a later date as required.

January 16

February 20

March 20

April 17

May 15

June 19

July 17

August 21

September 18

October 16

November 20

December 18

Mr. Bader made a motion to approve the proposed meeting schedule. Ms. Cardona seconded the motion.

**The motion passed unanimously: 4:0**

#### **VII: Old Business**

Mr. Morabito provided an update of the status of the project. The state requested additional time to review the plan. Mr. Morabito is in the process of obtaining the required signatures. The EPA provided comments regarding the abatement plan. Ms. Kisa (EPA) and Mr. Trombly (DEP) will be on vacation until January 6. Assuming that the EPA and DEP process move forward expediently; a letter of approval from the state to put the project out for bid should be forthcoming

Mr. Morabito informed the committee that work was required to remediate an issue with the sprinkler system. An invoice will be forthcoming for that work.

Mr. Morabito distributed copies of several documents regarding the budget. The committee reviewed the documents.

Ms. Marshall stated that she had a conversation with Twig Holland regarding the selection process for a Clerk of the Works for the project. Discussions will be continued and quotes will be requested, for evaluation by the committee. Ideally a Clerk of the Works can be selected by January. Mr. Morabito explained the duties of the Clerk of the Works as well as those of the architect, in overseeing the project on behalf of the town.

Mr. Dunn stated that it would be useful to provide the project schedule for posting on the website for interested parents and citizens.

**VIII. Public Comment** – There was no comment.

### **IX. Adjournment**

Mr. Dunn made a motion to adjourn the meeting at 8:10 p.m. Ms. Marshall seconded the motion.

**The motion passed unanimously 4:0**

Respectfully Submitted,  
Diane McClure  
Recording Secretary