

Unit 1: Getting Started

TEACHING STANDARDS/KEY TERMS

- Benefits
- Choices
- Compound interest
- Decision making
- Diversification
- Financial plan/Investment plan
- Goals
- Interest rate
- Investing
- Limited resources
- Market returns
- Needs vs. wants
- Opportunity costs
- Rainy day fund
- Risk
- Savings
- Time value of money
- Trade-offs
- Values



Unit Objectives:

INDIVIDUALS WILL:

- Discuss why people save and invest.
- Learn how to think about financial decisions.
- Understand key concepts of saving and investing (including the “time value of money”).

Unit Teaching Aids:

- LESSON 1:** Investing in the Real World (*Handout, page 1.11*)
- LESSON 2:** Saving and Investment Products, (*Handout, page 1.12*)
Comparing Savings and Investment Products (*Worksheet, page 1.15*)
- LESSON 3:** Pyramid of Investment Risk (*Overhead and Worksheet, page 1.16 & 1.17*)
Investment Risk (*Quiz, page 1.20; Answer Key, page 1.21*)
Time Value of Money (*Chart and Worksheet, page 1.22 & 1.23*)
Rule of 72 (*Worksheet, page 1.24*)
- UNIT TEST:** (*Test, page 1.25 & 1.26; Answer Key, page 1.27*)

For Instructors —

Defining “Investor Education”

This guide is about investor education — helping individuals understand how to successfully save and invest in order to achieve their future financial goals. You probably have seen a number of teaching guides and student workbooks in recent years that cover important topics such as how to balance a checkbook, deal responsibly with a credit card, buy life insurance and make other financial decisions. Those things are not the focus of this teaching guide. While general **financial literacy** is something that is undoubtedly essential to functioning in today’s society, there are any number of places where teachers and students can turn to get general financial education content of that sort.

That is why the teaching guide you are now reading focuses on one thing and one thing only: **investor education**. As such, *The Basics of Saving and Investing: Investor Education 2020* concentrates on such financial products as stocks, bonds, mutual funds, 401(k) retirement plans, IRAs, and other major investment tools. If you want to teach your students about other issues like responsible use of credit, buying insurance, etc., please consider using this teaching guide as an investment-specific supplement to the other topics that you are covering.

Why Teach This Unit?

Learning how to invest is valuable information from which many people can benefit. Company pensions are a thing of the past. Social Security is not intended to cover all of the financial needs of retirees. In order to achieve a secure future, most Americans will need to participate in the financial markets through individual investing or employer-based retirement programs — or both. Too many people jeopardize their future financial security by failing to take the time to learn about investing. It is important, therefore, that individuals learn how the financial markets (and the products sold in them) work. The first step in that process is the focus of this Unit: Learning how smart saving and investment decisions are made. You, and your students, will find that it isn’t nearly as intimidating a topic as they — and you! — may think.

Young people have money but few know how to manage it. Nearly half of all high school students have a part-time job. Some save their money and invest it for future needs, including funding a college education, buying a car, starting a family, or even taking the first steps toward purchasing a home. But too many young people spend everything they earn... and more!... on food, clothes, or entertainment. Worse, some students use credit cards to spend money they don't have and, in some cases, can't repay. By contrast, young people who understand and practice sound financial decision-making skills early in their lives are on the road to financial success.

Individuals who start investing early can become big financial winners. Students may wonder at first what a course about investing has to do with them. They may think they don't have much money now and have plenty of time later to worry about saving and investing. Most would think differently if they knew that just \$5 a week invested at 8 percent interest beginning at age 18 would grow to \$134,000 by the time they reach 65. Teenagers have an advantage that older people don't have: time. When they understand this concept and use time in their favor, young people have a much better chance of pursuing their dreams and reaching their financial goals.

Lesson 1: Why People Save and Invest

Most people start saving and investing to meet a specific goal, such as buying a car, continuing their education or starting a family. Among the tasks young adults face as they move into the working world are the following:

- Preparing for a career, often by going to college.
- Saving for major purchases and expenses (such as a college education, a family and a first home).
- Building up a “rainy day” fund for emergencies (possible job lay off, etc.).
- Developing a personal financial/investment plan.
- Starting a savings and investment program.

Beyond the things they may need or want either now or in the near future, people save and invest for other reasons. One of the most important reasons for people to save and invest is to provide the funds for a comfortable, financially secure retirement. People who save and invest for the long term are using their money to make more money — through interest in a bank product (such as a certificate of deposit) or through market returns on a stock, bond or mutual fund. Most investors need both bank and investment products to meet their long-term financial goals.

Lesson 2: How to Think About Making Financial Decisions

Saving and investing are good things — they can make one’s life better. Ask your class the following questions: Could you spend 10 percent less than you do now, still have fun and put that money to work for your future? If you could save 10 percent of your income for future goals, what would those goals be? It takes more than luck to get what you want out of life. Individuals have to know what they want and then commit to a plan to meet those goals. The hazards of not planning include the risk of having a lifestyle filled with limited choices. Students need to know that by “paying yourself first” — making saving a priority — they can do more than just dream about what they want in the future: Those dreams can really come true!

Most people have to work to earn money. And once they have earned it, they have an important choice to make:

- Spend it all; or
- Spend a portion and save the rest.

Whether one’s income is small or large, setting aside some of it for investments requires self-discipline. This means that anyone with the self-discipline to postpone buying certain things they’d like to have now can enjoy the longer-term benefits of having that money work for them through savings and investments.

Financial decision making is important in high school because each decision will bring students either closer to, or further away from, their saving and investing goals. For example, Thomas’s goal is to save \$100 each month for college. However, when he goes shopping and sees that iPhone that he has wanted for several months, he decides to buy it instead of saving or investing for college that month. If he makes similar spending choices month after month, Thomas will never reach his college savings goal.

The following decision-making model will help you help your students consider relevant information that will lead to an informed choice:

- 1 Define the Issue or Problem.**
Kathy wants to buy a car.
- 2 Gather Information.**
Before going to a dealer, Kathy searches the Internet to learn more about the types of cars in her price range, the safety and reliability of the models, and the resale value of the makes and models that interest her. She also looks in automobile magazines and talks with an auto mechanic and insurance agent to learn about the additional costs of car ownership.

3 Consider Alternatives and Consequences (trade-offs/opportunity costs).

Kathy explores her full range of choices. Would it be better to use public transportation? Should she purchase a new or used car? What will she have to give up to buy this car? Will she have to work more hours each week? Will she have to forego other activities that require spending money?

4 Make a Decision and Take Action.

After much consideration, Kathy decides to purchase a used car that is two years old, reliable, and safe. She also decides to put off the purchase for several months so that she can make a larger down payment.

5 Modify Plans as Needed.

Two years after purchasing the car, Kathy moves to a big city. For a few months she pays the high costs for parking, but soon realizes that it is much less expensive to use public transportation, so she decides to sell her car.

Your students' financial picture is all about the decisions they make now... and for their future. In the financial decision-making process, there are many different choices or alternatives that consumers must weigh. Each choice will have benefits and costs. As students weigh the benefits and costs of each alternative, it is important also to consider trade-offs and opportunity costs. **Trade-offs** are those items foregone as a result of choosing one option over another. **Opportunity costs** are those valued alternatives that are given up as a result of choosing one option over another. The concept of "opportunity cost" is key to understanding the power and benefits of investing for the future.

Consider Kathy's car-buying experience to explore needs, wants, choices, costs, benefits, trade-offs, and opportunity costs.

Lesson 3: Key Concepts of Saving and Investing

Over time, saving can build up money; however, investing offers the best way to achieve long-term financial goals. Any discussion of investing must begin with this simple truth: ***Investing means taking risks.*** Investment success depends in part on the ability to address those risks without passing up reasonable returns. That is why everyone needs to create a financial/investing plan (see Unit 3) that suits them and then they need to stick with it.

This lesson introduces several savings and investment vehicles such as stocks and bonds. These, as well as other vehicles, are discussed in more detail in Units 2 and 3.

Anyone can accumulate substantial sums of money by applying the following five keys to investment success. Note that these are keys, not “secrets.” There really aren’t any investment secrets.

KEY #1: Pay Yourself First

Make investing a habit. For most people with a small amount of money with which to start, the key to building up wealth lies in developing the habit of adding to one’s investments regularly and putting the money where it can do the most good. The rewards can really add up. For example, suppose a person takes \$5,000 and puts it in a savings account where it earns a safe 2 percent interest. Twenty years later that same deposit has grown to \$7,430 and change.

That’s nice, but it’s not going to finance a worry-free retirement. Suppose one’s goal is much higher than that — perhaps a nest egg of \$250,000. Assume a person has 20 years to reach that goal and the same \$5,000 to start, and is willing to investigate investment alternatives that have the potential to boost the return above earnings in a bank account. What’s a reasonable return to plan on, and how much will have to be added along the way? Since 1926, the stocks of large companies have produced an average annual return of nearly 10 percent. (Remember, that includes such “down” times as the Great Depression, Black Monday in 1987, the stock slide that followed September 11, 2001 and the recession of 2009.) At 10 percent, with \$5,000 to start and a goal of \$250,000, our investor must contribute \$279 a month to the investment account. With an 11 percent return, \$235 a month will grow to a quarter of a million dollars in 20 years.

KEY #2: Set Goals That Will Inspire Success

Students shouldn't be told just to "save and invest" for their future. Make the concept more concrete by discussing with them how they can work towards new financial goals: a new car... a new house... a college degree... a family. If they set vague goals, such as "financial security" or "a comfortable retirement," they'll have trouble measuring their progress along the way. They may even struggle to maintain interest in the project. Why is that true? Vaguely defined investment goals can lead to halfhearted efforts to achieve them. It is better to help your students set goals they can grab onto, goals that will excite them. Instead of "financial security," why not "\$500,000 net worth by age 60?"

Ask your students to think about how much their dreams and goals are going to cost. How much money will they need? Setting investment goals is a lot like reading a map: Before they can get to where they want to go, they've got to figure out their starting point. An easy way to help get your students there is by having them fill out the personal balance sheet in Unit 3. There are no "right" or "wrong" investment goals. They will be influenced by projected income and job security, risk tolerance and age. In addition, the time they have to achieve their goals should influence the kinds of investments they might consider. Most people have several goals at once.

Here are some scenarios to explore with your students that include different types of goals:

- **Short-term goals** | Suppose that a trip to Europe is one of your goals and that you would like to achieve it next summer. Such a short time horizon suggests that the stock market wouldn't be a good place to invest the money you're setting aside for the trip. The market is subject to wide swings, and you wouldn't want to be forced to sell your stocks in a downswing just because the time had come to buy your airline tickets. Don't put money into the stock market that you know you will need in the next two or three years. Low-risk vehicles such as certificates of deposit, for example, that mature about the time you'll need the cash or a money market fund that allows you to withdraw your cash instantly by writing a check may be a better choice.
- **Medium-term goals** | Maybe you'd like to buy your first house in five years. With more time, you have more flexibility. Safety is still important but you are in a better position to ride out down times in the financial markets and take on a little more risk. For medium-term goals like these, consider longer-term CDs that pay more interest than the short-term certificates you would buy to help finance your vacation trip. You could even consider mutual funds that invest in stocks that pay good dividends but don't tend to fluctuate much in price. That could give you high income (for reinvesting in more fund shares), a chance to ride along if the market zooms, and pretty good protection against all but a steep drop in stock prices.
- **Long-term goals** | A comfortable retirement is probably the most common of all financial goals. A college education for your children is another goal. For long-term goals like these, you can afford to take more risk. Consider a wide range of possibilities: stocks,

corporate and government bonds, and long-term CDs for diversification. Also take maximum advantage of tax-sheltered plans, such as individual retirement accounts (IRAs) and 529 college-savings plans. IRA earnings accumulate on a tax-deferred basis, and contributions may be tax-deductible. 401(k) plans provide many of the same advantages and might offer employer contributions that will help you reach your goal.

It is important to understand that these goals are likely to change, so it's important to reassess them annually, as is discussed in Unit 3. For instance, the kinds of growth-oriented investments that might be perfectly appropriate while accumulating a retirement nest egg and have a long-term horizon could be inappropriate after retirement when there is a need for income to pay the bills. The investment universe is vast and there are plenty of resources — magazines, newspapers, books, the Internet, investment advisers — who can help individuals decide how to rework their portfolios as their circumstances change.

KEY #3: Don't Take Unnecessary Risks

Risk and investing go hand in hand. In fact, risk can be defined as the chance one takes that all or part of the money put into an investment can be lost. The good news is that investing risk comes with the potential for investing reward — which is what makes the whole process worthwhile. Risk is the chance one takes that an investment will lose money, or earns less from one investment rather than another. If one can't reasonably expect to do better than that for the risk being taken, there's no sense in taking the risk.

Even seemingly “no-risk” products — such as savings accounts and certificates of deposit in federally-insured banks, savings and loans, or credit unions — carry the risk of earning less than the inflation rate. If the return comes in behind the rate of inflation, the investment has actually lost ground because your earnings aren't being maximized as they might have been with a different investment vehicle.

How does one control risk? Think of risk like a pyramid built on a broad, solid base of financial security, including a home and money in insured savings accounts or certificates. Visualize a pyramid. As one moves up from the base of the pyramid, the levels get narrower, representing the space in one's portfolio available for investments that involve risk. The greater the risk, the higher up the pyramid it goes and the less money should be entrusted to it.

How much should an individual have in savings? Three to six months' living expenses should be the goal. Bank, savings and loan, or credit union accounts are good places to keep this money. However, it's a good idea to look for opportunities to earn more than the 0.25 percent to 1 percent interest that these institutions tend to pay on their run-of-the-mill deposit accounts by putting most of it in higher interest producing investments like certificates of deposit, for example. One also might use a money market fund for at least part of this rainy day money. Such funds aren't federally insured, but they are conservative places to invest and they often pay a higher return than savings accounts.

Once one has built the base of their pyramid, they're ready to move up and become an investor. One level up is the appropriate place for mutual funds that invest in low-risk, dividend-oriented stocks and top-quality government and corporate bonds. Individual stocks and bonds are on the same level. Most financial experts would put investment real estate on the next level up. At the very top of the pyramid are investments that only experienced investors should try, such as penny or micro-cap stocks, commodity futures contracts and most limited partnerships. (*Instructors may want to expand on the variety of investment products listed here by going to Unit 2 for more detail.*)

How much risk is right? Controlling risk means more than being “comfortable” with an investment. Too many investors seem perfectly comfortable with too much risk. The basic thing to remember about risk is that it increases as the potential return increases. Essentially, the bigger the risk is, the bigger the potential payoff. (Don't forget those last two words — “potential payoff.” There are no guarantees.) That might sound exciting, but turn it around: the bigger the potential payoff, the bigger the risk of losing.

Does this mean one should avoid all high-risk investments? No. But it does mean that it is smart to confine them to the top of the investment pyramid — where they can never occupy a significant portion of one's investment portfolio. The basic rule to follow is: Invest only as much as you can afford to lose because you might, in fact, lose it. It's important to recognize the risks involved in every kind of investment.

KEY #4: Put Time to Work for You

Not familiar with the “time value of money?” The concept is one that everybody should learn about and live with since it can give financial security that one otherwise may not have. The concept is very simple: The more time individuals have to save and invest, the more money they can end up with... and not just in a $1 + 1 + 1 + 1 = 4$ kind of way. Money invested over time is **compounded** so that even small amounts invested regularly can add up to impressive sums. Compound interest means that interest is added on the original principal and on the accumulated past interest, thereby making your money grow into more, faster.

Consider college loans. Ever wonder why some young people and their parents work so hard to save and invest to pay for college tuition? Fast forward five years: Select a student who is now married and has a baby on the way. Let's say the cost of that child's four-year education in 18 years will be \$528,000 (a conservative estimate!). That's a huge sum, but because this student knows about the time value of money, she will find a way today to start saving for this expense. Why is that exactly? Because the dollars put away today are worth considerably more than they will be in 18 years. Assuming a time value for the money of 10 percent per year — meaning one could earn that much on the money between now and the time it will be needed — the value of the \$528,000 you need 18 years from now is about \$95,000. So, if that amount was available and salted away in an investment earning 10 percent a year, her child's college bills would be covered. Since it's unlikely she will have that amount handy, the smart idea would be to invest as much of it as she can as soon as she can to get the time value of money working for her.

A simple way to determine how long it will take for an investment to double in value is known as the Rule of 72. To use the Rule of 72, divide the interest rate into 72. The answer will be the number of years it will take for money to double in value. For example, with an interest rate of six percent, it will take 12 years for the money to double ($72 \div 6 = 12$). If the interest rate is eight percent, it will take 9 years for the money to double.

KEY #5: Diversify... Diversify... Diversify

Never put all your eggs in one basket. The way to accomplish this is through *diversification* — spreading out savings and investments over multiple categories (e.g., stocks, bonds and cash) in order to minimize the danger posed by an “up” or “down” in any one of the categories. The need to diversify one’s investments is two-fold:

- No investment performs well all the time; when one thing is down, another thing tends to be up.
- Investors may be able to increase their return by diversifying. The simple rule of thumb is this: The greater one’s diversification, the lower the exposure to risk.

Owning a variety of stocks and bonds may be one way to diversify one’s investments. But this can also be accomplished with mutual funds. Mutual funds are often the best way to diversify, although one needs to understand how to evaluate mutual fund track records and to analyze costs. And investing in bonds doesn’t necessarily mean only corporate or municipal securities. Variations on the bond theme can perform the same function for an investor’s portfolio, often at a more attractive return.

INVESTING IN THE REAL WORLD:

The 2007 Survey of Consumer Finances published in February 2009 found that 47.2 percent of all households maintain a savings account, representing more than \$3 trillion in low-interest savings. Using this data, we can look at how much money savers are losing each year by keeping their nest eggs in low-yield accounts. Consider the following:

- If all the deposits (totaling an estimated \$3 trillion) were shifted into accounts that paid 3 percent more (such as high-rate savings accounts, CDs, or Series EE Savings Bonds), savers would earn at least \$90 billion more in annual interest.
- If all deposits were instead shifted to Series I Savings Bonds, which pay 5 percent more than the average for deposit accounts, interest earnings would jump to at least \$60 billion more annually.

Lesson Outline: Saving and Investment Products

OBJECTIVE	<p>Learners will:</p> <ul style="list-style-type: none"> ■ Start discussing the role of saving and investment products. ■ Analyze several savings products from various financial institutions.
MATERIALS	<ul style="list-style-type: none"> ■ “Comparing Savings Products” worksheet (Page 1.15). ■ Chart on board or newsprint charts. ■ Chalk, markers, or paper markers.
PROCEDURES	<p>Instructor will:</p> <ul style="list-style-type: none"> ■ Use the “Saving and Investment Products” overhead (Page 1.14) to differentiate between saving and investing. ■ Discuss common saving vehicles. ■ Discuss the following questions: <ul style="list-style-type: none"> • <i>Which savings/investment vehicles have higher rates of return?</i> • <i>How are these instruments different?</i> • <i>Based on how they are described, what instrument products are most effective for these investment goals: safety, growth, income?</i> <p>Learners will:</p> <ul style="list-style-type: none"> ■ Work individually or in small groups to complete “Comparing Savings and Investment Products” worksheet. Information may be gathered via the Internet, newspapers, or telephone. ■ Present research to class members by posting it on master forms, blackboard, newsprint charts, or in short oral presentations.
ASSESSMENT	<ul style="list-style-type: none"> ■ “Comparing Savings and Investment Products” worksheet or class presentations.

Lesson Outline: Saving and Investment Products

**ESTIMATED
TIME**

- 60–90 minutes in class plus outside homework.

**BEYOND THE
CLASSROOM**

- Find the requirements for opening and maintaining a savings or investment account at a specific financial institution.

Worksheet: Saving and Investment Products

	Savings	Investments
OBJECTIVE	Short-term needs or emergencies	Long-term growth
PRODUCTS	Savings account, money-market account, CD	Stocks, bonds, mutual funds
RISKS	None on capital if FDIC insured (limits apply — contact local institution), but there is inflation risk	Varies, depending on investment product
SOURCE OF RETURN	Interest paid on money deposited	Interest, dividends, or capital gains or losses
KEY BENEFIT	Money is safe and accessible	Returns have outpaced inflation over the long term
KEY DRAWBACK	Returns historically have not outpaced inflation over the long term	Risk of losing money if securities decline in value

Name _____ Date _____

Worksheet: Comparing Saving and Investment Products

Financial Institution Name _____

	SAVINGS ACCOUNT	MONEY MARKET FUND	CERTIFICATE OF DEPOSIT
ANNUAL INTEREST RATE			
EFFECTIVE YIELD			
SAFETY (Insured by FDIC, NCUA, other)			
MINIMUM INITIAL DEPOSIT			
DATE TO MATURITY			
PENALTY FOR EARLY WITHDRAWAL			
SERVICE CHARGES, FEES			

Lesson Outline: Pyramid of Investment Risk

OBJECTIVE	<p>Learners will:</p> <ul style="list-style-type: none"> ■ Use the “Pyramid of Investment Risk” worksheet to make saving and investing recommendations for several different case studies (Page 1.19).
MATERIALS	<ul style="list-style-type: none"> ■ “Pyramid of Investment Risk” overhead (Page 1.18) ■ “Pyramid of Investment Risk” worksheet (Page 1.19) ■ Quiz: Investment Risk (Page 1.20)
PROCEDURES	<p>Instructor will:</p> <ul style="list-style-type: none"> ■ Discuss the relationship between risk and return. ■ Discuss the “Pyramid of Investment Risk” overhead. ■ List (as a class) different types of investment products (may include stocks, bonds, mutual funds, real estate, etc.). ■ Place these products in the blank Pyramid. ■ Discuss the trade-offs of high-, moderate-, and low-investment risk. ■ React to and give examples of the following investment statement: “All investment decisions involve weighing opportunity costs and trade-offs.” <p>Learners will:</p> <ul style="list-style-type: none"> ■ Create a list (as a class) of saving and investment products. ■ Place each of the investment products in the correct location on the “Pyramid of Investment Risk.” ■ Discuss why they have placed the products in each of the categories.
ASSESSMENT	<ul style="list-style-type: none"> ■ Contributions to class discussion. ■ Worksheet/Quiz: Investment Risk

Lesson Outline: Pyramid of Investment Risk

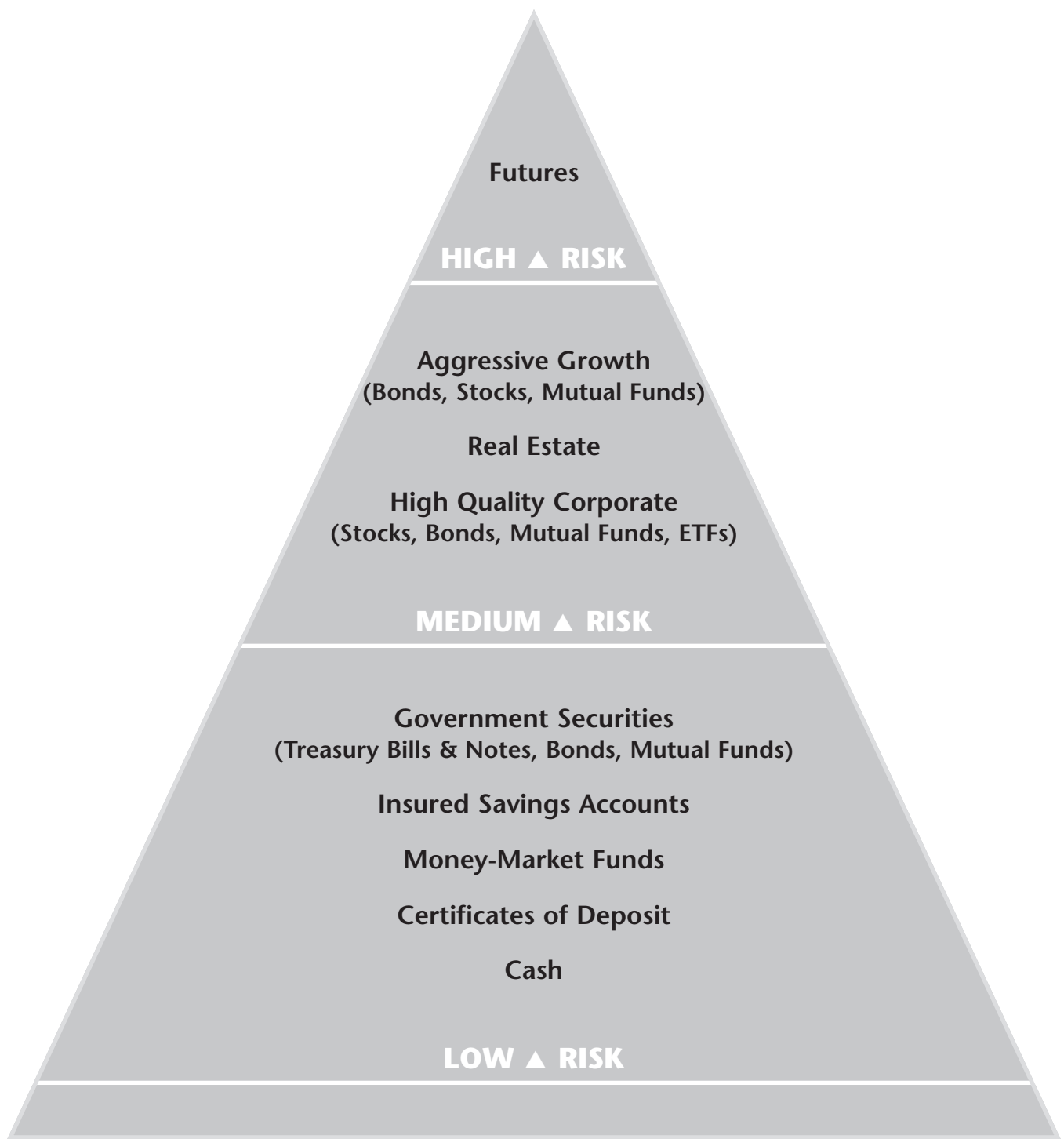
**ESTIMATED
TIME**

- 45–60 minutes of class time.

**BEYOND THE
CLASSROOM**

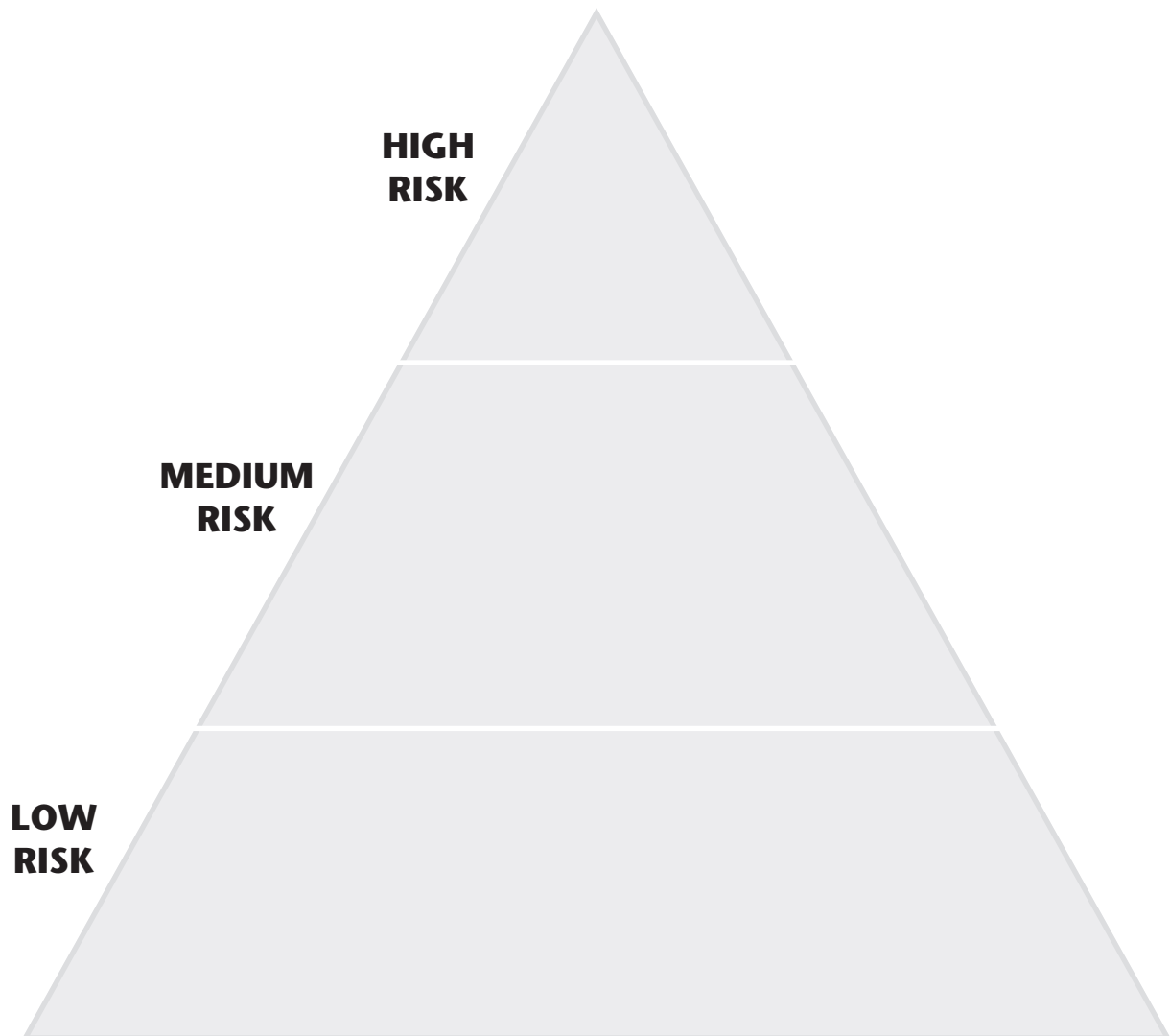
- Find an article in a newspaper or magazine or on the Internet that discusses a high-risk investment that has experienced substantial loss in value in recent months. Write a summary paragraph about the article and discuss why this investment was considered high risk.

Pyramid of Investment Risk



Pyramid of Investment Risk

Place the investment products in the correct location on the pyramid.



- | | | |
|---------------------------------|---------------------------|-----------------------------|
| ■ Aggressive Growth Stocks | ■ Real Estate | ■ High Quality Stocks |
| ■ Corporate Bond | ■ U.S. Savings Bonds | ■ High Quality Mutual Funds |
| ■ Futures | ■ Aggressive Growth Bonds | ■ Money Market Funds |
| ■ Gov't Securities/Bonds | ■ Savings Account | ■ Certificate of Deposit |
| ■ Aggressive Growth Mutual Fund | ■ Cash | ■ Exchange Traded Funds |

Name _____ Date _____

Investment Risk — Quiz

- 1** Bob Smith is saving for the down payment on a new car. If he is very careful with his money, he will have the full down payment in six months. Because his time frame is short, he is deciding between a low-risk saving option and a moderate-risk investment account. What would you recommend for Bob in these circumstances and why?
- 2** Jinhee Lee just graduated from college and began her first job. She has always wanted to buy a condo and believes that she could save enough for the down payment in three to five years. Would you recommend Jinhee place her money in a low- or moderate-risk investment vehicle? Why do you recommend this choice?
- 3** Juanita Romero is 16 and has earned some extra money at her summer job. She decides to invest it and let it grow until retirement. She has 49 years until retirement and realizes she can accept some risk. She's deciding between an investment that has moderate risk and one that has a slightly higher risk and the possibility of a higher return. What would you recommend Juanita choose and why?
- 4** Raemon and Keesha Wilson have a two-month-old baby girl and they are already planning for her college costs. They deposited a small amount into a savings account but are looking at several different investment options. Do you recommend that the Wilson's look mainly at low-, moderate-, or high-risk investments?

Name _____ Date _____

Investment Risk — Answer Key

Some learners may have answers that differ from those below. Instructors may choose to correct this quiz on a case-by-case basis if a learner properly defends his or her answer.

- 1** Low risk because of the short time frame.

- 2** Moderate risk because of the moderate time frame.

- 3** Moderate or moderately high risk because of the long time frame.

- 4** Moderate risk because of the moderate to long time frame.

Time Value of Money

Investor A invests \$2,000 a year for 10 years, beginning at age 25. Investor B waits 10 years, then invests \$2,000 a year for 31 years. Compare the total contributions and the total value at retirement of the two investments.

Investor A				Investor B			
			Year-End				Year-End
Age	Years	Contributions	Year End Value	Age	Years	Contributions	Year End Value
25	1	\$2,000	\$002,188	25	1	\$0	\$0
26	2	2,000	4,580	26	2	0	0
27	3	2,000	7,198	27	3	0	0
28	4	2,000	10,061	28	4	0	0
29	5	2,000	13,192	29	5	0	0
30	6	2,000	16,617	30	6	0	0
31	7	2,000	20,363	31	7	0	0
32	8	2,000	24,461	32	8	0	0
33	9	2,000	28,944	33	9	0	0
34	10	2,000	33,846	34	10	0	0
35	11	0	37,021	35	11	2,000	2,188
40	16	0	57,963	40	16	10,000	16,617
45	21	0	90,752	45	21	10,000	39,209
50	26	0	142,089	50	26	10,000	74,580
55	31	0	222,466	55	31	10,000	129,961
60	36	0	348,311	60	36	10,000	216,670
65	41	0	545,344	65	41	10,000	352,427
Value at Retirement			\$545,344	Value at Retirement			\$352,427
Less Total Contributions			(\$20,000)	Less Total Contributions			(\$62,000)
Net Earnings			\$525,344	Net Earnings			\$290,427

Note: Assumes a nine percent fixed rate of return, compounded monthly. All interest is left in the account to allow interest to be earned on interest.

Name _____ Date _____

Time Value of Money

Advantage of Investing Early in Life

Using the handout, “Time Value of Money,” answer the following questions.

1 At \$2,000 a year, how much did Investor A invest in the 10 years between ages 25 and 35?

2 What is the year-end value of Investor A’s investment at the end of 10 years?

3 At \$2,000 a year, how much did Investor B invest over the 31 years?

4 What is the value at retirement of Investor A’s investment?

5 What is the value at retirement of Investor B’s investment?

6 What are Investor B’s net earnings?

7 Summarize in your own words what is meant by “the time value of money.”

Name _____ Date _____

Worksheet: The Rule of 72

The Rule of 72 is a useful tool for investors. With the Rule of 72, you can calculate how long it will take your money to double at a given interest rate, if you reinvest the earnings.

72 Divided by the Percentage Rate of Return

E Q U A L S

The Number of Years Needed to Double Your Money

For example, if you had \$1,000 to invest, it would take nine years at 8% interest rate for the money to reach \$2,000. ($72 \div 8 = 9$). At 10%, it would take 7.2 years for the \$1,000 to double. ($72 \div 10 = 7.2$). How long will it take the following investment to double?

INVESTMENT	Rate of Return	Years to Double
1. CD	3.0%	_____
2. U.S. Treasury Note	2.66%	_____
3. Common Stock	10.0%	_____
4. Money Market	1.7%	_____

5. An investment club has a goal of picking stocks that grow 10% a year. How long would it take for such an investment to double in value?

Name _____ Date _____

Unit 1 Test

MATCHING

- | | |
|-----------------------|------------------------------|
| A. Values | F. Budget |
| B. Goals | G. Financial/investment plan |
| C. Decision making | H. Investments |
| D. Pay yourself first | I. Rainy day fund |
| E. Net worth | J. Living expenses |

1. _____ Money that is readily available for unexpected expenses
2. _____ Things that a person considers to be important
3. _____ An organized process of allocating income and investing to achieve one's financial goals
4. _____ What you own minus what you owe
5. _____ The idea that one should regularly set aside money for savings and long term financial goals
6. _____ An end result toward which effort is directed

TRUE OR FALSE

1. T F People who have low incomes have little need to develop a personal financial/investment plan.
2. T F The time value of money brings additional yields through compound interest.
3. T F "Never put all your eggs in one basket" demonstrates the need for investment diversification
4. T F A financial/investment plan can help eliminate uncertainty and conflict about financial decisions.
5. T F It is against the law for employers to pay into employee savings/investment programs.

MULTIPLE CHOICE

Circle the letter that answers the question correctly.

1. Financial worth is
 - A. liquid assets minus long-term investments
 - B. total assets minus total liabilities
 - C. total investments minus total debt
 - D. the worth of all personal assets

2. Before investing, a person should have all of the following except
 - A. unpaid balances on several credit cards
 - B. sufficient income to exceed current spending needs
 - C. savings to cover typical emergencies
 - D. a financial/investment plan that will be regularly modified

3. “Pay yourself first” suggests that a person should
 - A. avoid creditors and purchase non-essentials with cash
 - B. establish a business and work as its president
 - C. set aside money for regular savings and investing
 - D. pay back a loan you borrowed from yourself

Unit 1 Answer Key

MATCHING

1. I
2. A
3. G
4. E
5. D
6. B

TRUE OR FALSE

1. False
2. True
3. True
4. True
5. False

MULTIPLE CHOICE

1. B
2. A
3. C