LESSON
22

Internet Tools and Investing

LESSON DESCRIPTION AND BACKGROUND

This lesson provides an overview of basic investment options; it also introduces certain investment strategies. The lesson culminates with an activity that can be used to learn or review key economic and financial terms.

Lesson 22 correlates with national standards for economics and personal finance as shown in Tables 1-2 in the introductory section of the publication.

ECONOMIC AND PERSONAL FINANCE CONCEPTS

- Bonds
- Index funds
- Mutual funds
- Rule of 72
- Stocks

OBJECTIVES

At the end of this lesson the student will be able to:

- Define key investment terms.
- Explain key investment strategies.
- Define the characteristics of investment alternatives.

TIME REQUIRED

Two or three 45-minute class periods

MATERIALS

- A transparency of **Visual 22.1**
- Copies of Bingo Markers, cut from **Activity 22.A**—enough for each student to have 24 markers
- A copy for each student of **Activity 22.B**
- A copy of **Activity 22.B**, with each slip of paper cut out and placed in the Investment Bingo box
- An Investment Bingo box
- A copy for each student of **Exercise 22.1**, **22.2**, **22.3**, **22.4**, **22.5**, **22.6**, and **22.7** from the *Student Workbook*
- A small prize for the winner(s) of the Bingo activity

ADDITIONAL RESOURCES

To download visuals, find related lessons, correlations to state standards, interactives, and more visit http://fffl.councilforeconed.org/9-12/lesson22.

PROCEDURE

1. Introduce the lesson's focus on making choices among different financial investments. Making those choices requires, among other things, self-examination. Display **Visual 22.1**. Discuss its contents with the students. Emphasize the point that prospective investors need to think carefully about these basic questions. The answers will help them in their efforts to make appropriate investment choices, given their particular goals and circumstances.

2. Give each student a copy of **Exercise 22.1**, from the *Student Workbook*. Ask the students to read the exercise and answer the questions at the end. When they have finished, discuss the answers with the class:

a. During the 20 years examined in the graph above, is there one type of investment that consistently outperformed the other types of investments? ***(No, all of the investments were up and down by different amounts during different years.)***

b. Which fund appears to have the steadiest rate of return over the 20-year period? ***(The Vanguard Total Bond Market Index Fund.)***

c. What are the highest and lowest rates of return for the bond market fund? ***(It returned approximately 18 percent in 1995; its lowest annual return of approximately -2 percent was realized in 1994.)***

d. Since 2003, which fund appears to have had the most volatile annual return? ***(The Vanguard International Value fund. You may wish to tell the students that this fund is probably riskier than the other funds in the bar graph.)***

e. The historic average annual rate of return in the stock market from 1927 to 2009 was nearly 10 percent. The historic average annual rate of return on bonds over this same period was approximately 5 percent. Since 1989, in how many years did the Vanguard 500 Index fund outperform the Vanguard Total Bond Market Index fund? ***(15 years.)***

f. In how many years did the Vanguard 500 Index fund have a negative return? ***(5 years; you may wish to note that four of these years occurred in 2000 and after.)***

g. In how many years did the Vanguard Total Bond Market Index fund experience a negative return? ***(1 year.)***

h. If you had to select between investing in the Vanguard Total Bond Market Index fund and the Vanguard 500 Index fund, which fund would you choose? Why? ***(Answers will vary, but students should understand that investing in the bond fund will likely provide lower, but steadier, returns over a long period of time. Investing in stock fund is riskier, but it offers the opportunity to achieve higher—and more variable—returns in the long run.)***

3. Give each student a copy of **Exercise 22.2**, from the *Student Workbook*. Ask the students to read the exercise and answer the questions at the end. When they have finished, discuss the answers with the class.

a. How many shares did Kelly purchase over four months? ***(32.08 shares.)***

b. What was her average cost per share over this period? ***($200/32.08 shares = $6.23 per share)***

4. Give each student a copy of **Exercise 22.3**, from the *Student Workbook*. Have the students use information from the website http://partners.leadfusion.com/tools/motleyfool/savings02/tool.fcs to complete this exercise.

Note that some language used on this website differs slightly from language used in our exercise, but information from the website can easily be adapted for calculating the entries in the last row of the table. The correctly completed table is shown below.

Answers to Exercise 22.3

	U.S. Treasury Bills	Long-term Government Bonds	Large Company Stocks
Amount Invested	$100	$100	$100
Average Annual Rate of Return	3.7%	5.4%	10.2%
Additional Deposit	$100	$100	$100
Frequency	Monthly	Monthly	Monthly
Years Invested	20	20	20
Federal or State Tax	0	0	0
Inflation Rate	3%	3%	3%
Value of Investment after 20 Years	***$25,814***	***$30,695***	***$52,434***

a. What is the benefit of putting some of your money into riskier investments, such as stocks, for long-term goals such as retirement?
(Answers will vary. One view is that, over the long run, investors will have time to ride out the ups and downs of the market, and they need some riskier investments to hedge against inflation and to produce gains that outperform gains earned from less risky investments. It is important to point out that the calculated value of the investment after 20 years is the real, inflation-adjusted accumulation. This represents an increase in future purchasing power that results from a determined commitment to saving and making wise long-term investment choices.)

5. Give each student a copy of **Exercise 22.4**, from the *Student Workbook*. Ask the students to read the exercise and answer the questions at the end.

Note: Some students may ask where the number 72 comes from. You can explain that the number derives from a mathematical calculation of how long it takes for something to double in size when it is continually compounded. The number 72 is approximately equal to the number that results from this calculation; also, it is easy to use because there are many whole numbers (representing possible interest rates) that go evenly into 72. For more on the derivation of the Rule of 72, see *Mathematics and Economics: Connections for Life, Grades 9-12, lesson 14, Council for Economic Education, 2001*).

When the students have finished, discuss their answers with the class.

a. George has $700 in an account earning 10 percent. How long will it take to double his money? ***(7.2 years)***

b. Jay wants his money to double in eight years. What interest rate does he need to earn? ***(9%)***

c. Gennie wants to buy a home in five years. She needs a $10,000 down payment. At what interest rate will her $5,000 double in five years? ***(14.4 percent, which is not likely to be achieved, so she may need to invest more than $5,000 at the beginning of the five-year period in order to achieve her goal.)***

6. Give each student a copy of **Exercise 22.5**, from the *Student Workbook*. Tell the students that you are going to play a game that will help them learn key economic and financial terms. Before you get started, however, they have to fill out their bingo card. Ask them to take the 24 terms listed on **Exercise 22.5** and place one term in each of the empty squares on the bingo card. These terms must not be used more than once, and they should be randomly distributed so that no two students will have the same card. The "free lunch" box does not need to be filled in—it is already marked off for the students.

7. Provide each student with 24 Investment Bingo markers, cut from **Activity 22.A** (these are dollar signs). Tell the students that these markers are to be used to cover up the appropriate term whose definition you will read after you pull it out of the Investment Bingo box. It is therefore important that students understand the definitions of all the terms on the bingo card.

8. Give each student a copy of **Activity 22.B**. Tell the students that they will have a few minutes to study the terms and their definitions. Explain that you have cut out the strips for each of the 24 terms and have placed them in your Investment Bingo box. When you begin the activity, you will draw out one slip of paper at a time and read the definition (not the term), which students will have to identify with the correct term and mark it off on their bingo card.

9. After the students have studied the terms, collect all copies of **Activity 22.B** from them. Using the bingo box that you have prepared before class, begin to draw slips of paper, one at a time, and read the definitions. Students will then mark off the appropriate terms on their cards. Tell the students that they are out of luck if they don't know the term that fits the definition.

10. The students should yell "Bingo!" whenever

they have five markers in a line horizontally, vertically, or diagonally. All students get a bingo marker on the "free lunch" square. After someone has yelled "Bingo!" check the accuracy of his or her placements before closing out the game. Students often make mistakes, so validating their bingo is important.

11. Reward the winner of the activity with a small prize.

CLOSURE

Review these points: This has been an introductory lesson about investment terms, options, and strategies. But thoughtful investing requires more than knowing terms and reciting strategies. It requires self-examination, including careful attention by each investor to his or her financial goals, tolerance for risk, and plans for when funds may be needed at key points in the future.

ASSESSMENT

Give each student a copy of **Exercise 22.7**, from the *Student Workbook*. Using the three client statements and the Asset Allocator website at http://www.ipers.org/calcs/AssetAllocator.html, the students should estimate what a portfolio would look like for each client. Answers will vary by client. Pages 104 and 105 show suggested portfolios, represented in pie charts, for each client:

Client 1: Mario

Client 2: Sofia

Client 3: Ray

EXTENSION

Give each student a copy of **Exercise 22.6**, from the *Student Workbook*. Explain that individuals differ in their tolerance for risk when investing. This quiz will help them determine how much risk they feel comfortable with and what types of investments are associated with the levels of risk they prefer.

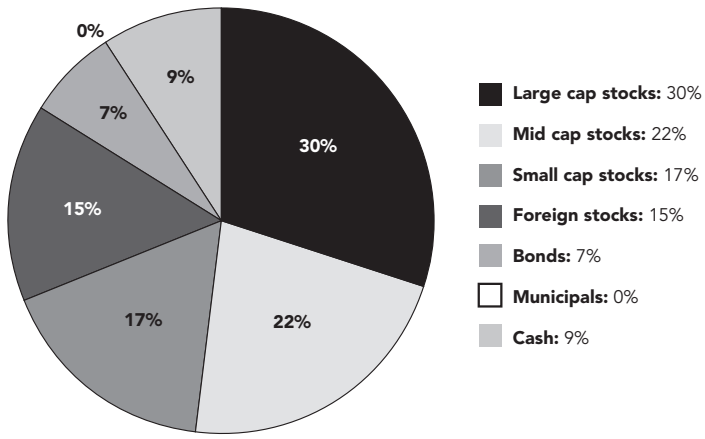
The students will need access to the Internet to complete this activity. The Investment Risk Tolerance Quiz can be found at http://njaes.rutgers.edu/money/riskquiz. This is located at the Rutgers University website, at a link for the New Jersey Agricultural Experiment Station (NJAES).

When they have completed the exercise, have the students answer the questions; then discuss their answers with the class.

- Risk tolerance score: ***(Scores will vary for each student.)***
- What are some investments that meet your preference for risk? ***(Answers will vary by risk tolerance.)***

Client 1: Mario

Asset Allocation Results

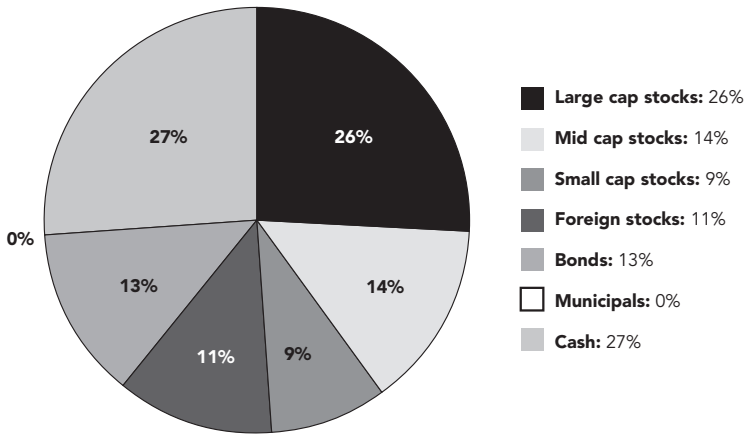


Client Criteria

Age 25
Current assets $0
Savings per year $2,000
Income required 0%
Marginal tax rate. 15%
Risk tolerance. . . . . Aggressive
(10 on a scale of 0 to 10)
Economic outlook . . . . . Moderate
(5 on a scale of 0 to 10)

Client 2: Sofia

Asset Allocation Results

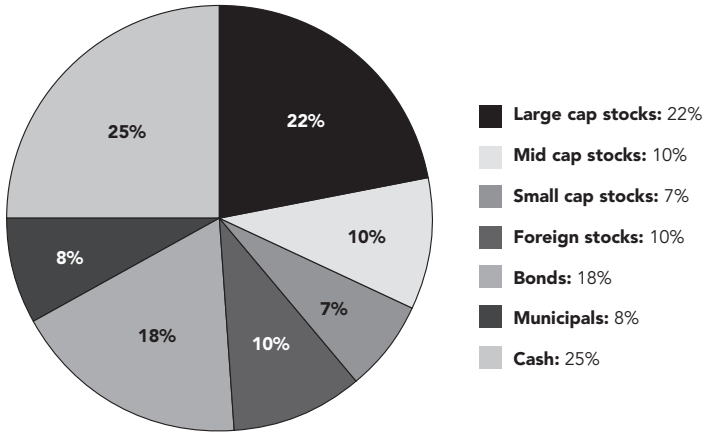


Client Criteria

Age 45
Current assets. $54,000
Savings per year $2,500
Income required 0%
Marginal tax rate. 25%
Risk tolerance . . Moderately Conservative
(2 on a scale of 0 to 10)
Economic outlook . . . . . Moderate
(5 on a scale of 0 to 10)

Client 3: Ray

Asset Allocation Results



Client Criteria

Age	65
Current assets	$625,000
Savings per year	$2,000
Income required	4+%
Marginal tax rate	28%
Risk tolerance	Conservative (0 on a scale of 0 to 10)
Economic outlook	Strong (10 on a scale of 0 to 10)

Want to Choose an Investment? Look at Yourself First

- What are my goals?
- How much money will it take to achieve these goals?
- How much money do I have? How much will I have in the future?
- When do I need the money?
- How much risk can I take?
- Am I willing to give something up now in order to live better later?
- Given my situation, what can I realistically expect?

Investment Bingo Markers

$	$	$	$	$
$	$	$	$	$
$	$	$	$	$
$	$	$	$	$
$	$	$	$	$
$	$	$	$	$
$	$	$	$	$
$	$	$	$	$

Investment Bingo Terms

An investment strategy in which a set dollar amount is invested on a regular basis no matter what the market is doing **Dollar-cost averaging**
Interest that is not only earned on the principal but also on the interest already earned **Compound interest**
What you give up in order to get something else; the next-best alternative **Opportunity cost**
A reward that influences choices **Incentive**
The money a person earns during a particular time period, often expressed weekly, monthly, or annually **Income**
The amount of financial resources a person accumulates, or total assets minus total liabilities **Wealth/Net Worth**
A procedure for determining how long it takes money to double at a particular rate of return **Rule of 72**
The risk that an issuer of stocks or bonds will be unable to meet its obligations to the holders of these financial instruments **Financial risk**
The risk that the price of an investment will go down because of changes in supply and/or demand **Market risk**
The risk that an investment will be difficult to turn into cash **Liquidity risk**
The rate of return from an investment after adjusting for inflation **Real rate of return**
The risk that an investment has been misrepresented **Fraud risk**

The rate of return from an investment before adjusting for inflation **Nominal rate of return**
A federally-insured account at a bank, savings and loan association, or credit union from which you can withdraw your money without penalty **Passbook savings account**
A type of bank deposit that you must leave in a bank for a specified period of time **Certificate of deposit**
A U.S. government bond that you can invest in for as little as $25 **U.S. Savings Bond**
The additional money earned on an investment, divided by the amount of the investment at the beginning of the period, expressed in percentage terms for a year **Annual rate of return**
A rise in the general price level **Inflation**
A mutual fund that includes purchases of short-term financial instruments that are very safe **Money market mutual fund**
Shares of ownership in a corporation **Stocks**
An investment option in which individual investors pool their money to diversify assets that are shares of ownership in corporations **Stock mutual fund**
Buying a home is an example of this type of investment **Real estate**
The risk that the real value of your investment will decrease because of a rise in the general price level **Inflation risk**
The greater the risk, the greater the potential reward **Risk/Reward ratio**