UNIT 2: THE VALUE OF A STOCK

Welcome to Unit 2! Congratulations on completing Unit 1. You are now a step closer to becoming master investors. As you move forward through the YIS units, you will continue to gain the skills and knowledge you need to become educated about investing and strengthen your leadership skills. Let's get started!

DESCRIPTION

In this unit, students will gain a deeper understanding of basic stock market principles and learn how to formulate the basic value of a company. They will be learn why the market fluctuates, and the key factors in determining the value of the company.

Length: Approximately 2 hours, split up into three (3) 40-minute lessons

CORE OBJECTIVES

Lesson One: The Role of Mr. Market

- Explain Mr. Market and why the stock market fluctuates.
- Locate stock information using online or other resources

Lesson Two: What is the value of a business?

- Understand the role of IPOs in determining stock prices
- Calculate market cap
- Understand the key factors that determine the value of a company

Lesson Three: Applying the P/E Ratio

- Understand and calculate P/E ratios
- Defend a company's value by applying knowledge of P/E ratios, market cap, and value

ABOUT YOUNG INVESTORS SOCIETY

Young Investors Society (YIS) is a non-profit organization dedicated to preparing the next generation of investors. Flagship programs include the YIS Global Stock Pitch Competition, the Dollar-a-Day Challenge with Free Money Match® scholarships and the Certified Young Investment Analyst (CYIA®) Designation. Learn more at https://www.seedasdan.org/yis/

CONTENT STANDARDS

LESSON ONE
CCSS.MATH.CONTENT.HSA.REI.B.3
Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
D2.Eco.1.9-12. Analyze how incentives influence choices that may result in policies with a range of costs and benefits for different groups.
CEE NATIONAL STANDARDS FOR FINANCIAL LITERACY (councilforeconed.org)
Standard V: **Financial Investing** Financial investment is the purchase of Financial assets to increase income or wealth in the future. Investors must choose among investments that have different risks and expected rates of return. Investments with higher expected rates of return tend to have greater risk. Diversification of investment among a number of choices can lower investment risk.
research.
LESSON TWO
CEE NATIONAL STANDARDS FOR FINANCIAL LITERACY (councilforeconed.org)
Standard V: **Financial Investing** Financial investment is the purchase of Financial assets to increase income or wealth in the future. Investors must choose among investments that have different risks and expected rates of return. Investments with higher expected rates of return tend to have greater risk. Diversification of investment among a number of choices can lower investment risk.
research.
CCSS.ELA-LITERACY.RI.11-12.7
Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.
CCSS.MATH.CONTENT.HSA.REI.B.3
Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
CCSS.ELA-LITERACY.RI.11-12.4
Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text.
LESSON THREE
CEE NATIONAL STANDARDS FOR FINANCIAL LITERACY (councilforeconed.org)
Standard V: **Financial Investing** Financial investment is the purchase of Financial assets to increase income or wealth in the future. Investors must choose among investments that have different risks and expected rates of return. Investments with higher expected rates of return tend to have greater risk. Diversification of investment among a number of choices can lower investment risk.
research.
CCSS.MATH.CONTENT.HSA.REI.B.3
Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

D2.Eco.1.9-12. Analyze how incentives influence choices that may result in policies with a range of costs and benefits for different groups.
CCSS.ELA-LITERACY.SL.11-12.1
Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11-12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
CCSS.ELA-LITERACY.SL.11-12.4
Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

ADDITIONAL RESOURCES

- Access to Computers and Internet is preferred, but not required
- Learning Material: https://www.seedasdan.org/yis/– curriculum, videos and lesson plans
- YIS Glossary of Terms (full database at yis.org/resources)
- Zacks.com – for company research including ratios and screens
- Morningstar.com -- for company research including ratios and screens
- Gurufocus.com -- for company analysis
- Y-Charts – for company analysis and stock graphs.
- Wallstreetsurvivor.com -- for basic stock concepts
- Yahoo Finance and Yahoo Finance App -- for stock charts and basic company information
- Greenblatt, Joel. *The Little Book That Beat the Market.*
- Seeking Alpha – online portal of stock research reports (www.seekingalpha.com)
- Motley Fool – great daily content and stock picks (www.motleyfool.com)
- Investopedia.com – the "Wikipedia" of Investing, great online glossary of terms
- Stockcharts.com – for tracking stock market performance and comparison between stocks.

LESSON ONE: THE ROLE OF MR. MARKET

OVERVIEW

The first lesson of Unit Two focuses on developing an understanding of why stock market prices fluctuate from day to day, week to week, and year to year. Students will learn about Mr. Market. They will practice locating stock information using online resources such as finance.yahoo.com or other resources.

LESSON SUMMARY

Warm-up: Students will be introduced to the idea of stock market fluctuations through a short activity and video.

Learning Activity: Students will learn about Mr. Market through a student-led skit and discussion.

Wrap-Up: Students will apply knowledge of market capitalization to find the market cap on a stock market website or in the newspaper.

Keep an eye out throughout the lessons for Investors' Tips on how to enable students to take over and lead. YIS is focused on creating a student-led learning environment where our student members take responsibility for their own learning.

OBJECTIVES

Students will be able to:

- Explain who Mr. Market is and the role he plays in stock market fluctuations
- Locate stock information using online or other resources

MATERIALS AND PREP

- Internet access
- Computers or smartphones for research
- Copies of Handout 2.1 (before class chose two students to play the role of Ms. Investor and Mr. Market. Make sure they have time to prepare before class begins)
- YIS Prezi Unit 2.1

RESOURCES

- Learning Material: https:/www.seedasdan.org/yis/
- Finance.yahoo.com
- Copies of Wall Street Journal if no computer access

Handout 2.1

Thank you for volunteering to lead today's learning activity! You will first perform the short skit and then lead the class in a discussion about Mr. Market. Make sure to review all the information on this sheet before class so you are prepared. Good luck!

Mr. Market Skit

Ms. Investor and Mr. Market each own half the shares of their company Kites Incorporated.

Monday Morning…

Ms. Investor: Good morning Mr. Market! How was your weekend?

Mr. Market: It was horrible! Did you see the wind reports in Greece? We need to sell this business!

Ms. Investor: I enjoy being your partner, but I don't see what our business has to do with Greece. Our customers are all in the United States. We shouldn't be hasty.

Mr. Market: Fine! You stay here if you want. I'll sell you half my shares in Kites Incorporated for half their value.

Ms. Investor: Okay!

Mr. Market stomps out of the office.

The next week…

Mr. Market: Good morning Ms. Investor! Did you have as great a weekend as I did? I feel like we can do anything. This spring weather is great for our kite business.

Ms. Investor: Good to see you again Mr. Market, but I thought you were throwing in the towel when it came to our kite business. You sold me all your shares for half price!

Mr. Market: I've changed my mind! Things are on the upswing I can feel it. I want back in!

Ms. Investor: What are you offering?

Mr. Market: I'll pay you double what those shares are worth!

Ms. Investor: Sounds great! Glad to have you back.

The following week….
Ms. Investor: Good morning. How are things going for you today?

Mr. Market: I guess things are okay. I really thought my shares would go up more by now. Plus my coffee was cold this morning.

Ms. Investor: Well, we have steady profit growth, no debt, and a solid business plan. I think patience is the key here.

Mr. Market: I don't know. I think I am looking for something more exciting. Can I sell my stocks back to you for their original value?

Ms. Investor: That doesn't sound like a great deal for me. I'm not going to purchase them this time.

Mr. Market: Well! I'll just find someone who will!

Discussion Questions

1. How would you describe Mr. Market? (mood swings, impatient, prone to making hasty decisions)
2. How would you describe Ms. Investor? (patient, focused on long term potential, takes advantage of a good deal)
3. Explain to your classmates that the value of the business isn't changing much from day to day. What does change is Mr. Market's moods.
4. Explain that we can't let Mr. Market keep us from investing. Instead we should try and take advantage of Mr. Market's mood swings. If we know the value of the stock, we can wait for Mr. Market to have a bad day and then get the stock we want at a cheap price. This is called **Margin of Safety**.
5. How can we know the value of a company? How do we know that our guesses about how much a company makes will be correct?
6. Think of something you've bought that you got a killer deal on. How did you get that deal? How is this similar to the stock market?

LESSON TWO: WHAT IS THE VALUE OF A BUSINESS?

OVERVIEW

The second lesson of Unit Two introduces students to initial public offerings, market capitalization, and economic moats. Students will analyze the value of Apple and learn the two most important factors in determining the value of a company. They will apply this knowledge to debate the value of Amazon and Wal-Mart.

LESSON SUMMARY

Warm-up: Students will teach their classmates about initial public offering, market capitalization, and economic moats.

Learning Activity: Students will investigate and analyze the value of Apple and learn the two key factors in determining the value of a company.

Wrap-Up: Students will research Amazon and Wal-Mart and discuss the value of each company.

OBJECTIVES

Students will be able to:

- Understand the role of initial public offerings in determining stock prices
- Calculate market cap
- Understand the key factors that determine the value of a company
- Apply knowledge of market capitalization, value, and economic moats

MATERIALS AND PREP

- Internet access
- Computers or smartphones for research
- Copies of Handout 2.2
- YIS Prezi presentation Unit 2.2

RESOURCES

- Learning Material: https:/ www.seedasdan.org/yis/
- Finance.yahoo.com

Handout 2.2

Value of a Business

What is the value of a business?

The value of any business is the sum of all future cash flows.

What?!

Let's take a minute to learn how to calculate the value of business by looking at annual profit.

Assume that Apple sells 200 million products per year at an average price of $1,000 each. So they make $200 billion dollars a year in sales. But to make those 200mn products, they spend $700 per device to design and make them and $100 to buy the equipment. So they're taking home $200 per device, or 40bn dollars.

Annual Profit

	Products sold	200 million
X	Average Price	$1,000 each
=	Sales	$200 billion
-	Product Cost	$160 billion ($700 + $100 X 200 million)
	Profit	$40 billion (or $200 per device)

Would you pay $40 to receive $40 next year? No!
But what if Apple sells more products the following year? Let's figure out how much they would make if they sell 5% more products each year. Fill in the empty Profit boxes using the above formula for calculating annual profit.

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	CONT..
Price	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000
Sold (in millions)	200	210	220.5	232	243	255	268	281	295	310	326	342
Revenues (in billions)	200,000	210,000	220,500	231,525	243,101	255,256	268,019	281,420	295,491	310,266	325,779	342,068
Cost	-$800	-$800	-$800	-$800	-$800	-$800	-$800	-$800	-$800	-$800	-$800	-$800
Profit (in billions)	**$40,000**		**$44,100**		**$48,620**		**$53,604**		**$59,098**		**$65,156**	

How much profit would Apple make if it sold 500 million products per year at the same price and the same profit per device?

LESSON THREE: APPLYING THE P/E RATIO

OVERVIEW

During the third lesson of Unit Two, students will learn and apply knowledge of the P/E ratio. Students will then wrap up the unit with a learning activity focused on utilizing their new skills to decide which company is the best long-term investment.

LESSON SUMMARY

Warm-up: Students will practice locating the stock price over the past 12 months and number of outstanding stocks.

Learning Activity: Students will learn how to calculate the P/E ratio. Students will apply knowledge to determine which company has the most value.

Wrap-Up: Students will present and defend their choices for which company has the most value.

OBJECTIVES

Students will be able to:

- Understand and calculate P/E ratios
- Defend a company's value by applying knowledge of P/E ratios, market cap, and value

MATERIALS AND PREP

- Copies of Handout 2.3
- Copies of Handout 2.4
- Internet access
- Computers or smartphones for research
- YIS Prezi presentation Unit 2.3
- Calculators

RESOURCES

- Learning Material: https:/www.seedasdan.org/yis/
- Finance.yahoo.com

Handout 2.3

THE "GO-TO" WAY TO VALUE A BUSINESS: P/E RATIO

One way to determine the value of a business is with the Price-to-Earnings Ratio or P/E Ratio. The P/E Ratio indicates how many years you have to wait at the current earnings of a company to get all your money back.

The price-earnings ratio can be calculated as:

Market Value per Share (Stock Price) / Earnings per Share

For example, suppose a company is currently trading at $43 a share and its earnings over the last 12 months were $1.95 per share. The P/E ratio for the stock could then be calculated as:

$43/$1.95 = 22.05

This means it will take you 22 years for the company to earn back the price of the stock. Another way to consider it is investors are willing to pay 22.05 for every dollar of earnings the company has. In general, a high P/E suggests that investors are expecting higher earnings growth in the future compared to companies with a lower P/E. A low P/E can indicate either a company may currently be undervalued or the company's profits are expected to decline.

Use the chart on the next page as a reference to answer the following questions:

1. Company A has a current stock price of $62. The earnings over the last 12 months were $2.95 per share. What is the P/E Ratio of Company A?

2. Company B has a current stock price of $22. The earnings over the last 12 months were $1.95 per share. What is the P/E Ratio of Company B?

3. Using the chart on the next page, explain which company you fill is a better investment based on just the P/E Ratio.

4. Do you think a low P/E Ratio is always a reason to not invest in a company? Explain.

Handout 2.3

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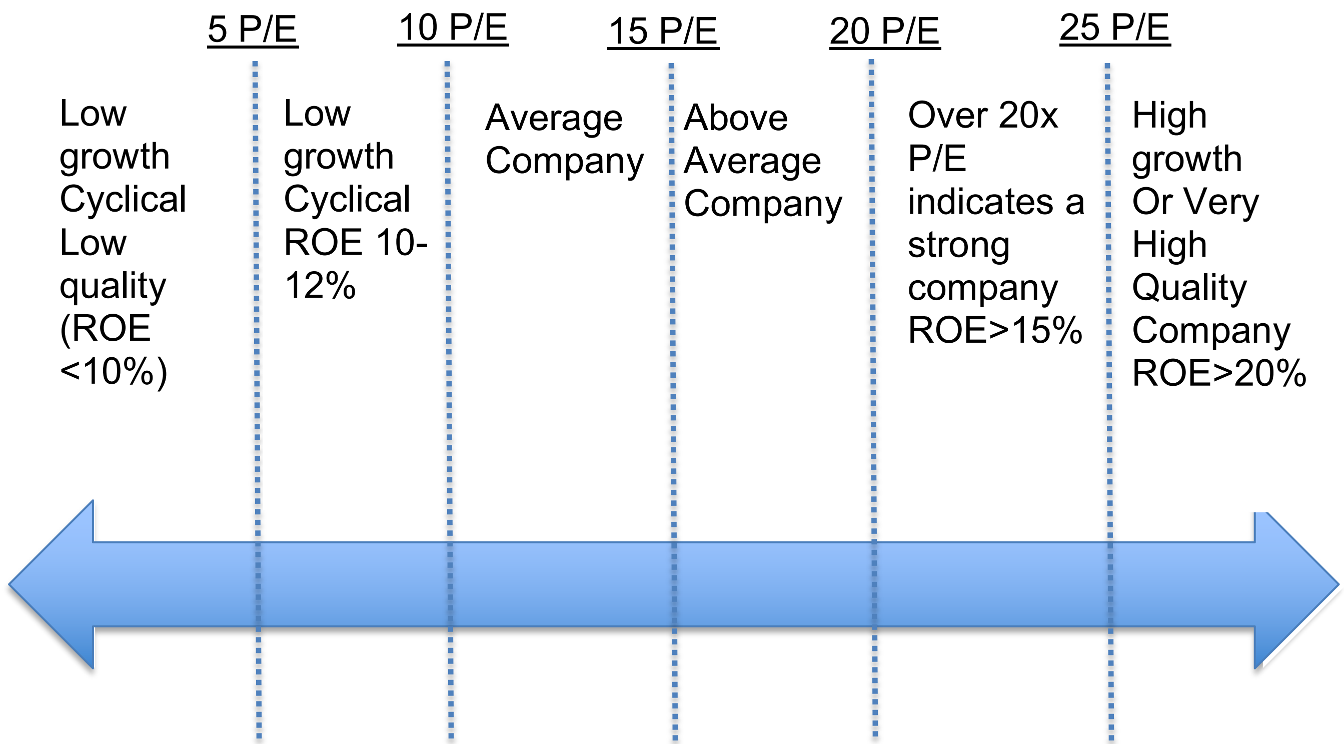
3. Using the chart on the next page, explain which company you fill is a better investment based on just the P/E Ratio.

4. Do you think a low P/E Ratio is always a reason to not invest in a company? Explain.

P/E Ratio Chart

Keep this chart to use on future activities and stock evalation!



In general, there are a couple of Price / Earnings (P/E) rules of thumb:

- The average P/E for the market over the past decade is 15x. An average company, should be worth about 15x.
- Really great companies (very high returns with consistent earnings growth) tend to trade about 20-30x P/E.
- Bad companies, ones whose earnings are unpredictable and make low returns, usually trade at below 10x P/E.
- A company should trade at about the P/E as its earnings are expected to grow in the future. Companies growing profits 30% per year may be justified to trade at 30x P/E. Companies growing 15% per year may trade at 15x P/E. Companies not growing may trade at 5-10x P/E.

Handout 2.4
Who will be the world's most valuable company?

In 2016, the three most valuable companies in the world were Google, Apple and Exxon Mobil. Your success as an investor depends on your ability being able to predict which company's value will be higher over time. Currently Apple is the most valuable company in the world worth $625 billion dollars. Google is valued at $400 billion and Exxon Mobil is valued at a little over $300 billion.
Using the chart on the Prezi, the chart below, and internet resources, you will have ten minutes to individually consider the following questions and decide in which company you will invest $10,000.

Key Financials of Google, Apple & Exxon Mobil

(as of 2014)	Google	Apple	Exxon Mobil
Business Description	Online Search, Android, tech leader	iPhones, iPads, Computers	Worlds Largest Oil Producer
Market Capitalization	$ 440.8	$ 625.5	$ 302
Sales (Mn $)	$ 65.8	$ 182.3	$ 364.8
Costs (Mn $)	$ (51.9)	$ (142.8)	$ (332.3)
Profit (Mn $)	$ 14.0	$ 39.5	$ 32.5
Profit Margin	21.2%	21.7%	8.9%
10 Yr. Avg. Sales Growth	35.4%	36.2%	3.3%
10 Yr. Avg. Profit Growth	42.7%	64.3%	2.5%
Return on Equity	14.5%	33.6%	18.7%
P/E Ratio	32.8	12.7	12.9

Here are some questions to guide your research and decision:

1. What company do you think will have the highest revenues 10 years from now?
2. What company do you think will have the highest profits 10 years from now?
3. What company has the strongest competitive advantage, or economic moat, that a competitor can't replicate?
4. Given that we don't know what the world's situation will be in 10 years, we may be in an economic boom or we may be in an economic bust, which company can you be the most confident that will maintain profits in any economic state?
5. What company is worth paying the highest P/E ratio for?
6. If each of these companies dropped suddenly tomorrow down to $100 billion market value, which one would be a "no brainer" that you would want to buy and hold?

HANDOUT 2.2

2016	$42,000
2018	$46,305
2020	$51,051
2022	$56,284
2024	$62,053
CONT	$68,414

HANDOUT 2.3

1. 21.02
2. 11.28
3. Company A
4. No, sometimes a company with a low P/E could be an undervalued company and a good investment. Further research should be done on the company.

HANDOUT 2.4

Answers will vary.