



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 introduced to the concepts of market capitalization, economic moats, the key factors in determining the value of the company, and learn how to apply the P/E formula to investment decisions.

CORE OBJECTIVES

Lesson One: The Role of Mr. Market

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

Lesson Two: What is the value of a business?

- 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

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

LENGTH

Approximately 90 minutes, split up into three (3) 20 to 40-minute lessons.

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

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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
- YIS Website www.yis.org – 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*.
- Guest Speakers -- Write Contact@yis.org if you want help arranging a financial professional to come to your class
- 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

- Donuts
- 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
- \$10 bill

RESOURCES

- YIS Website www.yis.org
- [Finance.yahoo.com](http://finance.yahoo.com)
- Copies of Wall Street Journal if no computer access

TEACHING GUIDE

Warm-Up: Ten Minutes

Introduction:

1. Have Prezi Unit 2.1 up when students enter the classroom.
2. Have a box of donuts open and enticing for students when they arrive in room, but do not allow them to eat the donuts. Make sure half the donuts are the same and the other half are unique. Have one donut that stands out from the rest. This activity can also work as a thought experiment without actual donuts, but the real thing will have a greater impact.
3. Ask the students the following questions:
How much would you pay for one donut?

These donuts here are all the same. Will you pay more or less for one of these than you would for the others?

What if the world has a sugar shortage and this is the last known box of donuts? Will you pay even more?

What if you just ate a box of donuts and aren't hungry?

4. Explain that the donuts represent a company. When a company goes public and sells stocks, everyone has a chance to own some of the donuts, or part of the company. But, as students saw with the discussion, people vary wildly on what they are willing to pay.
5. Ask students what they could do to maximize the value of the box of donuts? (advertising, create scarcity, etc)
6. Explain this is how the stock market works. The stock market is made up of people that get excited about something or sick of something depending on their mood. What is obvious is that occasionally **the market goes nuts!**
7. Students will watch the following video (and eat the donuts!).
<https://www.youtube.com/watch?v=ss0cHrqFr3Q>
8. Lead students in a discussion on the following questions:
What do you do when the market goes down?

How is Warren Buffet using common sense about when things are "on sale"?

Do you agree with his approach?

LESSON ONE: THE ROLE OF MR. MARKET

Learning Activity: 20 minutes

Introduction:

1. If students have access to the internet, have them go to finance.yahoo.com and search for GM. Once they have found GM, they will need to click on Key Statistics. If students do not have access to the internet, print out the GM Key Statistics page prior to class.
2. Ask students to locate the following information:
The high and low prices of GM stock during the past 52 weeks
The number of shares outstanding
3. Students will calculate the highest value of the company and the highest value of the stock in the past 52 weeks. Give students a few minutes to figure this out on their own. The solution is to take the lowest stock price and multiply it by the number of outstanding shares and then compare that figure with the highest stock price multiplied by the number of outstanding shares.
4. Ask students why the value of GM's stock changes so much. Is GM drastically changing its business model during the year? They are making cars. They aren't searching for a gasoline replacement or building rockets to the moon. Ask students what they believe causes these fluctuations.
5. Explain to students that these types of price fluctuations happen with all companies even if the market is stable. The market doesn't know anything we don't know. So why do these fluctuations occur?

Learning Activity 1:

1. Invite the two students you selected prior to class to take the floor and lead the Mr. Market skit activity.
2. The students will use Handout 1.1 to complete the skit and lead the discussion.
3. Once the student presenters are finished, ask if anyone has additional questions about Mr. Market and how he effects stock market fluctuations.



Make sure you have selected the students to lead the Mr. Market skit before class starts. Allow them to lead the

Wrap-Up: Ten minutes

1. Hold up the \$10 bill. Ask a student how much they will give you for the \$10 bill.
2. Ask another student if they will give you 10 \$1 bills for the \$10 bills.
3. Ask the entire class if anyone wants the \$10 dollar bill for a \$5 bill.
4. Ask if anyone will give a \$20 bill for the \$10.

LESSON ONE: THE ROLE OF MR. MARKET

5. Explain that the most successful investors are able to find and purchase stocks that are worth, for example, \$10 but only cost \$5. How do they do this? They are able to take advantage of the fact that value is tricky to calculate and the market behaves irrationally, just like Mr. Market.
6. Ask students if they think Mr. Market is a good or bad thing for the market?
7. Explain that it is very good for an educated investor. If all investors made investment decisions rationally and after making conservative estimates of the value of a company, like we do, it would be difficult to make money in the stock market. But stocks are bought and sold by humans and humans, like Mr. Market, are subject to their emotions and make investing decisions based on hype around a stock or because something is trendy.
8. We don't want to be like Mr. Market so we will be learning how to calculate the value of a company and make sound investing decisions without letting our emotions dictate our decision making process.
9. **Divide class into three equal sized groups. Assign each group one of the following terms: economic moat, market capitalization, and initial public offering. Each group must come to the next class meeting prepared to explain and present their term to the rest of the class. Creativity is encouraged.**



This activity can be completed by the groups at the beginning of the next class, but asking the students to take initiative outside of class will encourage

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

- YIS Website www.yis.org
- Finance.yahoo.com

TEACHING GUIDE

Warm-Up: 15 Minutes

Introduction:

1. Have Prezi 2.1 up when students enter the classroom.
2. Ask students to break up into their groups and allow them a few minutes to prepare to present on their topics: initial public offerings, market capitalization, and economic moats.
3. Give each group 1-2 minutes to present their topic to the class.

Activity:

1. Ask students to explain **initial public offering** based on their classmates' presentation. Ask students how an initial public offering of \$100 million could be divided up. Example: 10 million shares at \$10 or \$20 million at \$5. Make sure students understand that companies hire investment banks to use complex formulas and valuation techniques to determine how to offer up shares. Ask students what they think the advantages and disadvantages are for doing more or less shares.
2. Ask students to explain **market capitalization** based on their classmates' presentation. Ask students to calculate the market cap of a company with a \$5 stock price and 10 million shares outstanding. (\$50 million) Ask which company is worth more: Company A with \$10 stock price and one million shares or Company B with a \$5 stock price and 10 million shares. (Company B) Explain that a stock price is a relative and proportional value of a company's worth and only represents percentage changes in market cap at one given point in time. As the stock price changes, so does the market cap and the value of the company. This is why we pay close attention to stock prices. Even a \$0.10 drop in stock price could mean \$100,000 loss in the company's worth.
3. Ask students to give examples of **economic moats** based on their classmates' presentation. Explain that companies can have an advantage based on being able to offer a product at a lower cost, having lower production costs than other companies, owning valuable assets like patents, or making it hard for customers to switch to another brand. Let students know you will be going over this in more detail in the next unit.

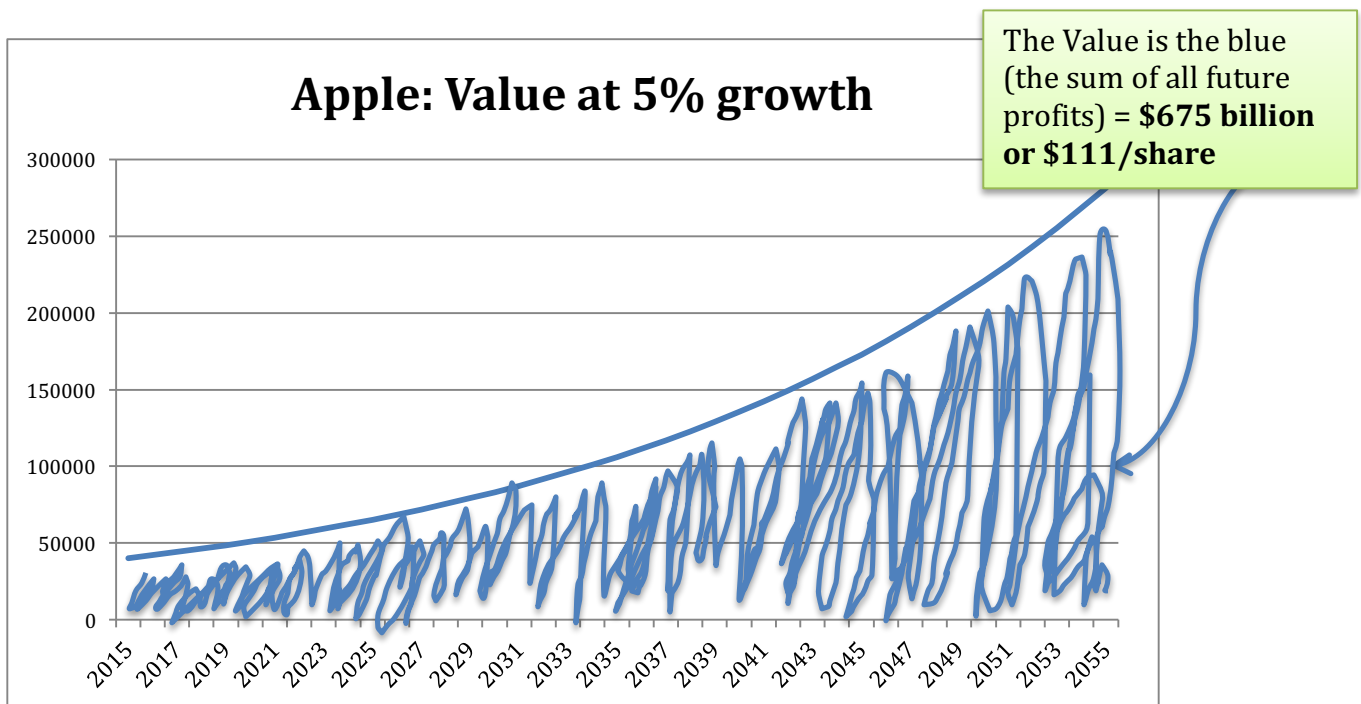
Learning Activity: 20 minutes

1. Explain to students that there are two critical questions to answer when determining the value and worth of a company and whether it is a good investment:
 - How much are the profits going to grow?
 - How long are these profits sustainable?

LESSON TWO: WHAT IS THE VALUE OF A BUSINESS?

2. Students will divide into small groups to work through Handout 2.2.
3. While students are working, circulate and make sure any questions are answered.
4. Review answers to Handout 2.2 with students.
5. Explain to students that they will be exploring the impact of high growth then margin pressure, no growth, and steady growth to understand the importance of investing in companies with sustainable profits that can grow.
6. Using the Prezi, show students the three unlabeled charts for Apple's hypothetical growth. Ask students to consider each chart and choose the one they would like to see as a hypothetical investor of Apple.

Chart #1:



LESSON TWO: WHAT IS THE VALUE OF A BUSINESS?

Chart #2:

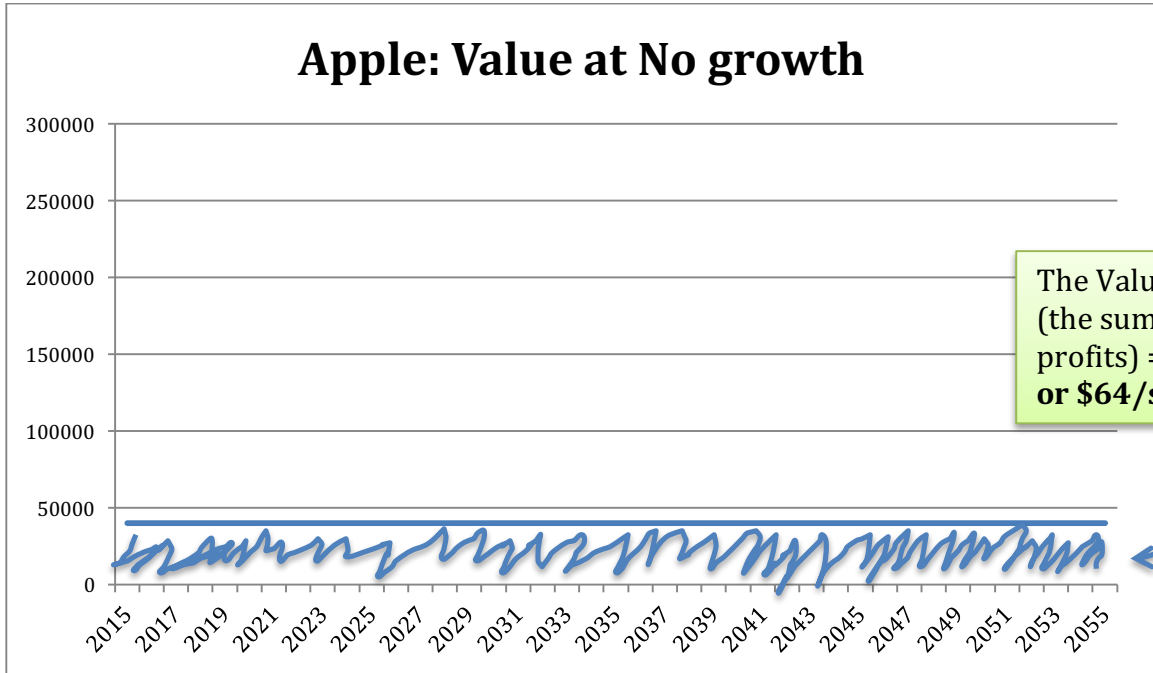
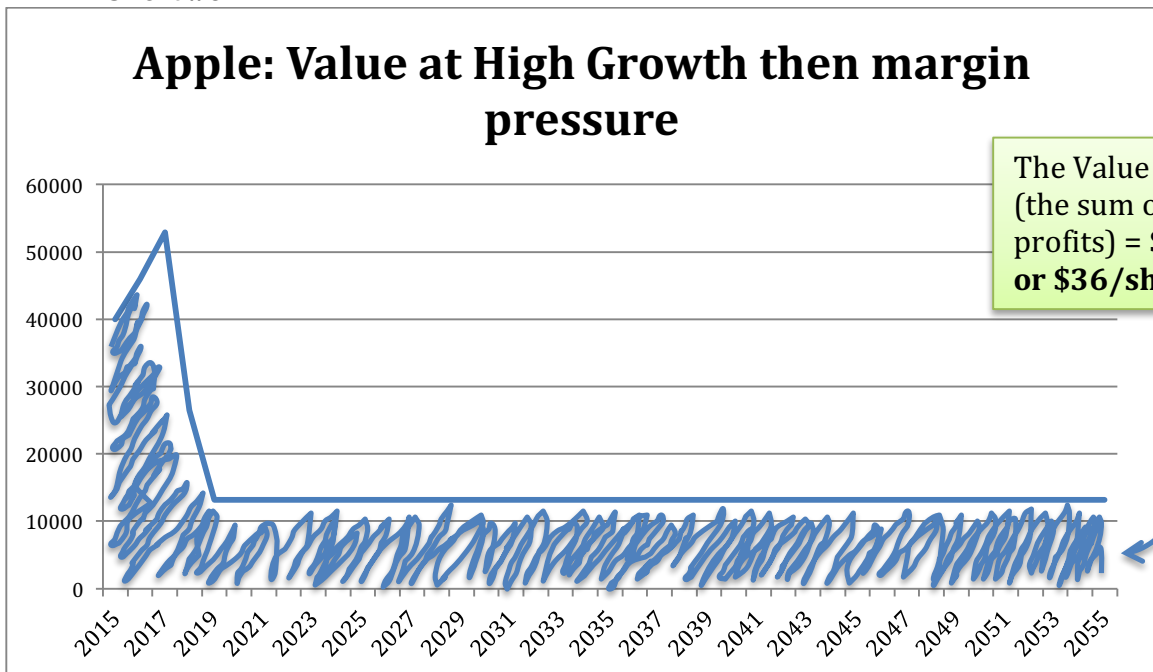


Chart #3:



LESSON TWO: WHAT IS THE VALUE OF A BUSINESS?

7. After students have chosen and explained which chart they would like to see as an investor, use the Prezi slides with the labeled charts to explain each chart in detail.

Chart #1: Explain that this chart shows steady growth at 5% per year, just like the chart students completed on Handout 2.2 and is the correct answer to which chart we want to see as investors because the shares maintain their value.

Chart #2: Explain that this chart shows no growth and assumes Apple only sells the same amount of devices every year. The graph is flat and the total value of Apple is cut in half to \$391 billion, or \$64 a share. You've lost half your money!

Chart #3: Explain that this chart shows very strong growth of 15% per year for a few years, but then market pressure and competition pick up and the profits get cut in half. The profits continue to get cut in half and the value of Apple plummets to \$220 billion, or \$36 a share. Ouch!

8. Reinforce with students that our goal when making investment decisions is to determine "How long will this last?" Will a company's current profits continue? Will they grow? Will they fall?
9. Explain that even the best investors have been dead wrong on the value of companies on many occasions. For many of the companies on the market, they have no idea what the true value of the company is. Why? The future of many companies is too uncertain to predict. Ask students why the future of companies may be too uncertain to predict.
10. Ask students how they think they can predict if a company will have a profitable future. Explain to students that most companies don't have any real defenses, or economic moats. Fortunately, some companies do have substantial moats that can't be easily competed away. These are the high-quality businesses we want to invest in. We can be more assured that these companies will have as good a value today as tomorrow. If Mr. Market comes to us in a bad mood and wants to sell shares in these companies for a discount we say, "Sure! Give me all you got!"

Wrap-Up: Ten minutes

1. Students will use their knowledge of market cap, economic moats, and profits to discuss Amazon and Wal-Mart.

LESSON TWO: WHAT IS THE VALUE OF A BUSINESS?

2. Have students break into two groups and answer the following questions:

Why do you think Amazon.com (AMZN) has nearly the same market cap as Wal-Mart (WMT) even though they make less today in profits?

What company do you think will be valued more in ten years?



Groups should select a student leader in their group to facilitate the

3. Use finance.yahoo.com and explore the following questions to help answer the above questions.

Who is growing sales faster?

Who is growing profits faster?

Which business do you think has profits that are more sustainable?

4. Each group must select Amazon or Wal-Mart as an answer and choose two students from their group to present their reasoning to the class.

Handout 2.2

Value of a Business

What is the value of a business?

The value of any business is the present value of all future cash the company will make minus the cash it needs to invest to make this happen.

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

- YIS Website www.yis.org
- Finance.yahoo.com

TEACHING GUIDE

Warm-Up: Ten Minutes

Introduction:

1. Have Prezi 2.3 presentation up when students enter the room
2. Explain to students that they will each be accessing finance.yahoo.com to find the Earnings Per Share (EPS), current stock price, and P/E of three companies of their choosing.
3. Challenge students to figure out the relationship between these three numbers and raise their hands once they think they have it figured out.

Learning Activity: 30 minutes

Learning Activity One:

1. Pass out Handout 2.3.
2. Students will partner up and complete the handout.
3. After completing the worksheet, ask students if they think they should only consider the P/E ratio when making decisions about their investments and why. Explain that there are other things to consider, but that the P/E Ratio is an important tool.
4. Discuss with students the following critical concepts:

Stocks fluctuate wildly over the course of a year. The true value of the business does not actually change much.

The reason behind this is that there is a man named Mr. Market that is just plain NUTS!

If someone offers you a dollar for fifty cents, take it!

The P/E ratio is a good starting point to determine the value of a company.

The two most important things that determine the value of a company are 1) how much profits are going to grow to and 2) how long that profit level is sustainable.

Learning Activity Two:

1. Explain to students that the three most valuable companies in the world are Google, Apple, and Exxon Mobil. Tell students they will be deciding which company to invest \$10,000 in. Remind them that their success depends on their ability to predict which company's value will be higher over time.
2. Pass out Handout 2.4 to students. Make sure the below chart is displayed on the Prezi.

LESSON THREE: APPLYING THE P/E RATIO

Bloomberg

GOOG US Equity (Google Inc)
AAPL US Equity (Apple Inc)
XOM US Equity (Exxon Mobil Corp)



3. Give students 10 minutes to work individually to decide which company they will invest in.
4. At the end of ten minutes, students will form groups in different areas of the room according to which company they chose. There should be three groups (Google, Apple, and Exxon). If there is one company no one chose, simply eliminate that group and complete the activity with two groups.
5. The groups now have ten minutes to formulate three main reasons why they think this company is the best investment. Each group should choose a presenter to present during the wrap-up activity.

Wrap-Up: Ten minutes

1. Each group will now present their reasons for choosing their company. The other groups will then have a few minutes to ask the presenting group questions and clarifications.
2. During the presentations and debates, any student that changes their mind may get up and switch to a new group.
3. The group with the most members at the end of the presentations and debates is the winner.

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:

$$\mathbf{\$43/\$1.95 = 22.05}$$

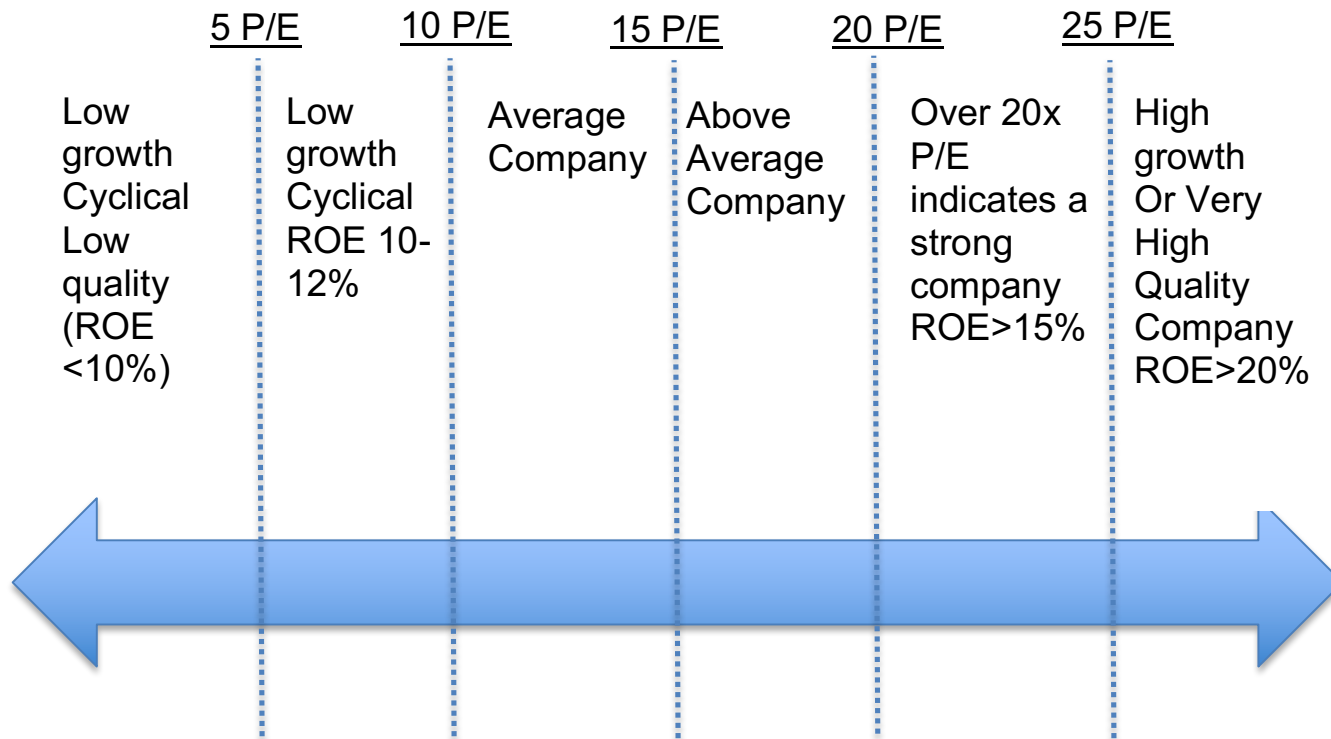
This means it will take you 22 years for the company to earn back the price of the stock. Another way to consider it is investors are willing to pay 22.05 for every dollar of earnings the company has. In general, a high P/E suggests that investors are expecting higher earnings growth in the future compared 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.

P/E Ratio Chart

Keep this chart to use on future activities!



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

- The average P/E 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 20-25x 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?

You have saved \$10,000 from your first job and have decided to invest it in the stock market. You know the three most valuable US companies in the world are 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? Can you identify the company's economic moat (brand, network effect, cost advantage, high switching costs)?
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?

ANSWER KEYS

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.