

# What is P/E Ratio?

## Suggested Grade

Middle School, High School

## Suggested Time

45 minutes

## Teacher Background

The price/earnings ratio is a stock's last price divided by its latest annual earnings per share. It is expressed mathematically as:

$$\frac{\text{Stock's Last Price}}{\text{Annual Earnings Per Share}} = \text{P/E Ratio}$$

For example, if a company's latest yearly earnings per share is \$1 and its most recent stock price is \$20, the P/E ratio would be 20.

$$\frac{20}{1} = 20$$

In the financial media one would hear that the stock is trading at "20 times earnings."

The P/E ratio shows how much you would have to pay for each dollar of the company's latest earnings. Whether the amount is a lot or a little depends on many things. One of the most important is how fast investors expect a company's profits to grow in the future. What they are really buying is a share of the expected future earnings. These estimates then determine how much investors will pay for stocks today. The outcome is that stock prices reflect the market's best estimate of the company's future earnings growth.

## Vocabulary

**Earnings:** Whatever profits or net income remains after subtracting the company's expenses from its revenue; a company's profit.

**Earnings Growth Rate:** How quickly in percentage terms a company is growing their earnings from year to year.

**Growth Stocks:** Are stocks that attract investors by their potential for growth and higher stock prices (most times by reinvesting their earnings). They offer small or no dividends.

**Income Stocks:** Are stocks that tend to have a history of regular dividends that are the essential element in the stock's return to investors.



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**Price to Earnings Ratio:** A company's closing price divided by its latest annual earnings per share. The Price / Earning is the relationship between a company's earnings and its share price. It is calculated by dividing the current price per share by the earning per share.

**Risk:** The chance of losing all or part of the value of an investment.

**Risk Tolerance:** An individual investor's ability to accept loss of some or all of the money they have invested, based on a number of factors including age, financial stability, amount of time before invested funds are needed for other purposes, etc.

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**Sector:** A group of stocks, often in one industry. The performance of any single stock in a sector can be measured against the performance of the group. Pharmaceutical companies, for example, are part of the health care sector.

**Stock:** A type of security that signifies ownership in a corporation and represents a claim on part of the corporation's profit (or loss). Companies usually issue stock to raise money for a variety of reasons, including expanding or modernizing their operations.

**Stockholders:** Also known as shareholder; ownership of shares in a business.

## Performance Objectives

The students will be able to:

- Distinguish between a company's earnings and its P/E Ratio.
- Use a company's P/E Ratio to make informed investment decisions.
- Examine companies' P/E ratios and earnings growth rate to determine the risk involved in investing in these companies.
- Calculate PE Ratio

## Materials

*Activity Sheet 1: About P/E Ratios*

## Springboard Activity

Display the following table:

	Company A	Company B
A. Stock Price	\$20	\$15
B. Earnings (last 12 months)	\$10,000	\$4000
C. Shares owned by stockholders	10,000	8000
D. Earnings per share(= B/C)	\$1.00	\$0.50
E. Price/Earnings Ratio (= A/D)	20	30



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Working in their SMG teams, have the class predict which company's stock is more expensive. They will need to provide a rationale for their answer.

After eliciting responses from the class, explain the process for determine the more expensive stock:

Divide Company A's earnings for twelve months (row B) by the number of shares owned by its stockholders (row C). The result will provide you with its earnings per share (EPS) (row D). The EPS is the amount of its earnings that would belong to you if you owned one of its shares.

Divide its stock's price by its EPS to figure out the cost of owning one share of its stock. The result is called a P/E Ratio. Company A's P/E Ratio is 20 because a share that costs \$20 gives you ownership of \$1 worth of the company's current earnings.

Company B's P/E Ratio is 30 because you have to spend \$30 dollars to own \$1 worth of its earnings.

The P/E Ratio helps an investor determine the cost of a share a stock for \$1 worth of earnings. Company B's stock is more expensive than Company A's because \$1 worth of Company B's stock costs \$30, while \$1 worth of Company A's stock only costs \$20. Just because the price of Company A's stock is higher, it does not mean it is more expensive.

Explain to your students that the reason investors use the PE Ratio is that it sometimes can indicate that a stock is overvalued and a price correction is necessary, or that it's undervalued, which may be a buying opportunity.

If a stock's P/E Ratio is a lot higher than others within the industry group it may be overvalued and investors may avoid it in the short term until the P/E Ratio comes more in line with other stock in the industry. The P/E Ratio may indicate instead high expectations for the performance of the company within the industry. Conversely, a low P/E ratio may indicate that the stock is undervalued with respect to the rest of its industry, meaning it's a good value. Or, it could mean that there are low expectations for the company within the industry. The P/E Ratio may be used to prompt the investor to conduct more research into a company before purchasing (or selling) its stock.

## Procedure

Distribute **Activity Sheet 1**, in this exercise, students will be asked to examine the P/E ratio of various stocks within an industry group.

Distribute **Activity Sheet 1** for the SMG master and grand master level teams to complete.

Once they have completed **Activity Sheet 1**, then students will research an industry group online and look for stocks that look risky within that industry group. Students will be looking for stocks that have a higher P/E ratio than others in that industry. They will write down at least three stocks within an industry. Using the P/E ratio as a predictor, rate the selected companies from riskiest too most conservative. Have students explain their rankings.



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## Assessment

Ask the students to look at the P/E Ratio for each stock in their portfolio. Using the Industry Leaders comparison table at <http://finance.yahoo.com> ask them to answer the following questions about the stocks:

1. What stock looked like it was overvalued? Explain
2. Why do you think its P/E ratio was so much higher than the other stocks?
3. What more do you need to know about this company? Explain

To view the Industry Leaders comparison table:

1. Enter your company's ticker or name in the "Get Quotes" box
2. Select your company and click "Get Quotes"
3. Select "Industry" under the Company heading on the list of links on the left of the screen.

## Application

To help in determining the price to earnings ratio the following formula can be used. The P/E ratio is the current price of the stock divided by its current yearly earnings per share. For example, a stock that is \$20.00 and earns \$2.00 per share will have a P/E ratio of 10 (20 divided by 2).

A stock's price per share is currently \$30.00 and the earnings are \$2.00 per share. What is the P/E ratio for this stock? If the stock is in the food industry, and the current P/E ratio for a stock in this industry is 17. Would you buy, sell, or hold this stock? Explain your answer.

A stock's price per share is currently \$60.00 and the earnings are \$1.00 per share. What is the P/E ratio for this stock? If the stock is in the technology industry, and the current P/E ratio for a stock in this industry is 37. Would you buy, sell, or hold this stock? Explain your answer.

A stock's price per share is currently \$70.00 and the earnings are \$2.50 per share. What is the P/E ratio for this stock? If the stock is in the energy industry, and the current P/E ratio for a stock in this industry is 28. Would you buy sell, or hold, this stock? Explain your answer.

### Grand Master Level:

A stock's price per share is currently \$96.55 and the earnings are \$5.00 per share. What is the P/E ratio for this stock? If the stock is in the financial industry, and the current P/E ratio for a stock in this industry is 20. Would you buy, sell, or hold this stock? Explain your answer.

## Enrichment Activities

Many companies have no earnings at all. Research such a company. Would they have a price earnings ratio? What does this tell you about the company and the risk of owning this company? Under what circumstance would you purchase such a company?



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