

Pricing

SUBMITTED BY: Nina Hoe, University of Pennsylvania

SUBJECT(S): Computation

GRADE LEVEL(S): 9, 10, 11, 12

≡ OVERVIEW:

In this lesson, students read a Knowledge@Wharton article that describes different types of pricing. Students break up into small groups and make short presentations on the different strategies. In small groups, students compute prices for hypothetical companies based upon different strategies. Finally, students revisit the concept of pricing in general as they reflect on their computations.

≡ NBEA STANDARD(S):

- Computation, I. Mathematical Foundations
- Computation, II. Number Relationships and Operations
- Computation, III. Patterns, Functions, and Algebra
- Computation, VI. Problem-Solving Applications

≡ WHARTON GLOBAL YOUTH PROGRAM ARTICLE:

- [“A Platform for Selling Art and Pursuing Dreams”](#)

Objectives/Purposes:

- Identify and understand different pricing strategies.
- Compute profit margin percentages.
- Perform common statistical analyses and procedures (compute mean, median, mode).

- Solve micro-pricing problems to account for overhead costs.

Knowledge@Wharton Articles:

- [“How Much Should You Charge? Why ‘Smart Pricing’ Pays Off”](#)
- [“Chinese Firms Excel in ‘The Art of Price War’”](#)
- [“What Consumers — and Retailers — Should Know about Dynamic Pricing”](#)
- [“McCormick’s Alan D. Wilson on Pricing, Innovation and the ‘Romance of Spice’”](#)

Other Resources/Materials:

- [Calculators](#)
- [Student Worksheet](#)

Activity:

Start by having students read the first page of the article: [“How Much Should You Charge? Why ‘Smart Pricing’ Pays Off”](#)

1. Whole Class Discussion: (5 mins)

1. What is “pricing”?

Play the Wharton Global Youth Program Glossary: [Pricing](#)

“Pricing is the price a firm sets for the products it sells. Wal-Mart has a pricing policy to be as low or lower than any of the competitors. Wal-Mart will match or beat anyone’s prices.”

2. Why is proper and thoughtful pricing important?
3. Why are pricing decisions difficult to make?
4. How do companies set the prices for their products? What are the strategies they use?

2. Small group activity/presentations (15 mins total)

In the article, Raju and Zhang discuss several pricing strategies. Divide the class into groups to read about the following strategies and report back to the class (take only 5 minutes). **Make sure that the terms are highlighted in the article so that students can go directly to the strategy.** This will save everyone time on reading the entire article and allow students to practice presentation skills. Have students focus on the basic idea of the pricing strategy and the market conditions for which it is best suited (highlight examples).

- Cost-plus
- Competition-based
- Consumer-based
- Pay-as-you-wish
- Zero-price
- Price-war
- Micro-pricing

Whole Class

5. Have students report back on each pricing strategy (a – g).

Make sure to highlight and discuss:

6. How do companies choose which strategies to use?
7. Which types of companies/businesses are best suited to use these different methods?
8. What are the benefits and drawbacks of each of these methods?

Introduce the idea of **competitor pricing**. This is a strategy whereby a vendor or company prices one or more items very low in order to entice customers – this is a “teaser” item. In addition, the same company prices other items much higher, hoping that customers who come in to buy the low priced items will additionally buy the higher priced items out of convenience.

9. What are revenues?

Play the WGYG Glossary: [Revenues](#)

“Revenues are the sales of products, merchandise and services that a company makes to customers due to the normal business activities. The Philadelphia Phillies, the 2008 World Series Champions, generated a record-breaking \$216 million in revenues from ticket sales, merchandise, and refreshments last year.”

- 10. What is the relationship between profit and revenues?
- 11. What is a **profit margin**?

Profit margin is the amount by which revenue from sales exceeds costs in a business.

(For a 40-45 min class period, choose 1 of the following 2 small group activities.)

3. Small Group/Pair Activity (1) (15 mins total)

Price Simulation Exercise:

Divide the class into ___ groups. Each group manages a corner store and is charged with the task of strategically pricing 4 items:

Item	Cost to merchant
Milk (Gallon)	\$2.52
Coke (20 oz. bottle)	\$0.74
Banana	\$0.15
Loaf of Bread	\$1.81

Assign each group a different pricing strategy from the list above and instruct them to price each of the items according to their strategy. **(For example, cost-plus will decide a particular profit margin and mark up accordingly. Competitor-based will find out what other stores are charging. Consumer-based should interview individual members of the class about how much they would pay and take the mean or median. Competition-based will decide which item(s) to drop the price on and which to raise. Micro-pricing can entice customers by selling slices of bread or glasses of milk. Etc...)**

After the groups have priced their items, have students write their prices on the board. Have students calculate their revenues. From the revenues, subtract the cost of the items to the merchant. For the simplistic purposes of this exercise, this number will represent the comparable **profit** (we can assume that all stores have the same operating costs).

Then have individual students go around and vote on which store they would choose to shop in.

Discuss as a class:

1. Which store attracted the most customers?
2. Which store generated the most profit?
3. Which pricing strategies were the most effective in this business/market?
4. How might these outcomes change if this was a different type of business?

4. Small Group/Pair Activity (2): (15 mins)

1. Using the **cost-plus-pricing strategy**, a business owner decides to price items in order to have a certain profit margin, or percentage on top of each item sold. These percentages are based upon the number of items you estimate selling. Compute the following:

- Item/Service: Radio
Cost to business owner: \$8.12
Desired profit margin: 60%
Price for customers: **\$13 (8.12×1.6)**
- Item/Service: Candy Bar
Cost to business owner: \$0.50
Desired profit margin: 200%
Price for customers: **\$1.50 (0.50×3)**
- Item/Service: Used Car
Cost to business owner: \$15,485
Desired profit margin: 10%
Price for customers: **\$ 17,033.50**
- Item/Service: Pedicure
Cost to business owner: \$12.50
Desired profit margin: 50%
Price for customers: **\$ 18.75**
- Item/Service: Flip-flops
Cost to business owner: \$4.38
Desired profit margin: 125%
Price for customers: **\$ 9.86**

2. You have developed a new calorie-free vitamin drink and using the **consumer-based pricing strategy** you decide to conduct some market research. You give your product to 25 potential customers to sample, and ask them how much they would pay for the drink retail. There results are as follows.

\$1.69	\$2.00	\$1.99	\$1.50	\$0.00
\$2.50	\$3.59	\$1.75	\$1.50	\$1.75
\$3.00	\$1.60	\$1.80	\$2.49	\$2.99
\$1.50	\$1.00	\$1.59	\$2.89	\$2.65
\$2.69	\$2.50	\$3.99	\$1.99	\$1.50

- Find the mean. [Remember that the **mean** of 2 or more numbers is the average of them. To calculate this, add up all of the numbers and divide by the number of data (or numbers).]
(\$2.10)
- Find the median. [The median is the middle number. To calculate this, line up the data in order and find the middle number. If there are an even number of data, take the average or mean of the 2 middle numbers.]
(\$1.99 – this takes a long time and can be omitted if time is short)
- Find the mode. [The mode is the number that occurs most often.]
(\$1.50)
- These are three measures of central tendency – three numbers that describe data. Which do you think is the best to use as the retail price? Why?
(Answers will vary.)
- Are there other numbers that you would consider?
(might look at range)

3. A massage therapist charges \$75 for a 55-minute massage, which allows him 5 minutes to transition between clients, change sheets, etc. so that he can do one massage per hour. However, he is having a hard time finding enough clients who want, or can afford, the full hour. He decides to **micro-price** and try offering shorter massages. However, doing shorter massages means that there are many more transitions, and now he thinks he can get the transitions down to 3-minutes between clients. If he still wants to make \$75 per hour,

- What will he need to charge for 5-minute massages?
(There are several ways to solve this problem. If he makes \$75/hour he makes \$1.25 per minute. If a 5-minute massage requires 3 minutes of transition time, that is a total of 8 minutes – so he would need to charge $8 \times \$1.25 = \$10.$)
- What would he need to charge for 10-minute massages?
(\$16.25)
- What would he need to charge for 15-minute massages
(\$22.50)

Have students report back about their answers.

Tying It All Together:

1. Why are different strategies used?
2. Revisit the article. How do companies choose which strategies to use?
3. Which types of companies/businesses are best suited to use these different methods?
4. What are the benefits and drawbacks of each of these methods?

Extending the Activity

Have students split up into small groups and conceptualize a business idea. Have them decide how they will price their products. If time allows, do computations.

Practice Outside of the Classroom: Observe the pricing strategy of different products next time you are at a store. How does the pricing strategy impact your purchase decision?