The Skies of Beijing
One World Ambassador: Victoria Wang
Learning Activity #2: Supply and Demand

Focus Area: Algebra I or Algebra II; The learning activity touches on aspects of functions, economics, and basic stock market vocabulary.

Grades: 9th - 12th

Duration: 90-minute class period; 1-2 days depending on block schedule

Objective: (LW – Learner will)
1. LW identify and describe the business concept of supply and demand through algebraic and graphical representations.
2. LW find the solution to a system of equations
3. LW understand the relationship between risk and return

Preparation: The teacher should make student copies of the following handouts: Case Study: Widgets, Vocabulary Sheet, Graph Paper, Supply and Demand Worksheet, Internet Pathfinder and the Written Report Rubric. Teachers should confirm access to a computer lab so that every student has the opportunity to conduct individual research.

Reflection Prompt: Victoria writes, “Yet he invested all of his savings in the stock market, for he was confident that China’s economy would not fall within the next few years. He was right, but he never was able to see the results of his risky investment.”

DCPS Standards:
• AII.P.9 Use symbolic, numeric, and graphical methods to solve systems of equations and/or inequalities involving algebraic, exponential, and logarithmic expressions. Also use technology where appropriate. Describe the relationships among the methods.

Procedure:

Step 1: Getting Started: Review the essential questions with your students:
• How do I find the solution to a system of equations?
• How is the price of a product determined?
• Why do prices go up and down?
• What is the relationship between risk and return?

Explain that to answer the essential questions, they will find the supply and demand curve for a product of their choice. They will act as an economist working for a consulting firm. A company hires each “consultant” to find the supply and demand curves and the best price for their product, and they will deliver a written report to the company about their findings.
**Step 2: Read and Review:** Distribute the handout called *Case Study: Widgets* and have students read it individually and answer the questions. Review together and answer any questions they may have. Then, distribute the *Vocabulary Sheet* and review the terms as they will relate to student research on the product they choose.

**Step 3: Choose a product to analyze:** Distribute the *Graph Paper* and the *Supply and Demand Worksheet* to students. Have students select the product that the client company produces. The students will research the supply and demand relationship for this product. Students should be as specific as possible when selecting a product to research.

Examples: Cars, Flat-Screen Televisions, Cell Phones, Xbox

**Step 4: Students will get the m₁, m₂, b₁ and b₂.**

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\begin{align*}
    m₁ &= \_\_\_\_\_\_\_\_\_\_\_\_ \quad & m₂ &= \_\_\_\_\_\_\_\_\_\_\_\_ \\
    b₁ &= \_\_\_\_\_\_\_\_\_\_\_\_ \quad & b₂ &= \_\_\_\_\_\_\_\_\_\_\_\_ \n\end{align*}
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**Step 5:** Have students find the theoretical equilibrium point for their product.

**Step 6:** In the computer lab, distribute the *Internet Pathfinder*. Using those sites, have students conduct research to find the actual equilibrium point for the product they have chosen.

**Step 7:** Have students find the new supply and demand lines through this equilibrium point.

**Step 8:** Using the *Graph Paper* provided, have students graph the supply and demand lines.

**Step 9:** Students will answer the reflection questions. On the Supply and Demand worksheet, they will write a draft of their answers. They should revise them into paragraph form and include them in the final written report.

1. Why is it appropriate for a supply curve to have a positive slope?
2. Why is it appropriate for a demand curve to have a negative slope?

**Step 10:** Distribute the *Written Report Rubric* and review this with students to be sure they understand your expectations for the finished product. Then, using their work from the *Supply and Demand Worksheet*, have each student write their final report for the company.
Checking For Understanding: There are opportunities for both formative and summative assessment throughout this learning activity.

- **Step #2**: Students demonstrate understanding by thoroughly answering all comprehension questions in complete sentences. These are structured to assess on all levels of Bloom’s, especially analysis, synthesis, and evaluation.
- **Step #3**: Students demonstrate understanding by accessing supply and demand both algebraically and graphically.
- **Steps #4-8**: Students demonstrate understanding by studying real-world applications of mathematical concepts. This exercise also exposes students to the business world; a strong academic and career choice for students with strengths in math and science. Students demonstrate understanding by using and applying Marzano’s Vocabulary.
- **Step 9**: Students demonstrate understanding by successfully completing the Supply and Demand Worksheet.
- **Step 10**: Students demonstrate understanding by turning in a completed Written Report that meets or exceeds the expectations outlined in the *Written Report Rubric*.

Global Action Activities:

1. Have students design their own newspaper, where they are responsible for a business section with multiple articles and stories on local, national, and worldwide business. These should be more current-event focused and include themes such as supply-demand, economics, and the stock market. They can even incorporate graphs and pictures. Technology is applicable through the Internet and programs such as Microsoft Publisher. Distribute the paper to the school, if possible, to help educate other students on these important business issues.
2. Plan a field trip for students to a local company, and also a larger national or international company in your city. This will give students insight into the management of businesses on different scales.

Extension Activities:

1. As an extension activity has students select one international business and research their products, supply-demand, trade routine, marketing, management, business ethics, and operating policies. Students can work in groups to conduct thorough research, conduct interviews, and organize a presentation for the class. After each class has presented groups can compare and contrast their findings pitching for specific companies they consider successful.
2. Have students compare and contrast the supply and demand of major goods that contribute to GDP in China and the United States. Encourage them to highlight the dependence each country shares just between each other.
3. Have students research investment and the risk and liability involved for individuals and companies. In the United States especially our stock market has been very volatile due to our economy’s recession.
4. Have students explore international consulting firms, that impact business all over the world and how they recruit recent college graduates. These types of companies could offer students internships and an amazing opportunity to travel the world.
5. Have students uncover government regulations on price setting and if the United States government and Fed are more powerful in this role than governments in Asia or Europe.
Additional Resources:
  • http://www.investopedia.com/
  • http://www.fbla-pbl.org/
  • http://library.thinkquest.org/3088/stockmarket/introduction.html
  • http://www.fte.org/
  • http://www.nfte.com/
  • http://www.mindtools.com/pages/article/newSTR_69.htm
  • http://www.economist.com/

Related OWEd Resources:
  • **Victoria’s Reflection**: The Skies of Beijing
  • **Unit Resource 1**: Previewing the Experience
  • **Unit Resource 2**: Understanding the Experience
  • **Unit Resource 3**: Reviewing the Experience
  • **Unit Resource 4**: Culture Cube
  • **Unit Resource 5**: Visualizing the Experience
  • **Case Study**: Widgets
  • **Supply and Demand Worksheet**
  • **Vocabulary Sheet**
  • **Graph Paper**
  • **Internet Pathfinder**
  • **Written Report Rubric**