Cabbage Patch Dolls, Beanie Babies, and White Power Rangers
The Story of Supply and Demand

Grade Level: 7

Topic: Economics, Supply and Demand

Overview: Supply and demand are key concepts in the study of economics. In this lesson, students will participate in a hands-on activity to develop the concepts of supply and demand, and then investigate the relationships among supply, demand, and prices with video resources. Finally, students will apply the concepts by running a simulated "Lemonade Stand."

Time Allotment: Three 45-minute periods

Media Components:
United Streaming Video:
UNDERSTANDING ECONOMICS *The Marketplace: Supply and Demand*
Websites:

- *Social Studies for Kids, Basic Economics: Supply and Demand* – This basic informational website defines supply and demand with easy-to-understand explanations. http://socialstudiesforkids.com/articles/economics/supplyanddemand1.htm
- *Supply and Demand* – This website gives a brief description of supply and demand and a short quiz. http://pittsford.monroe.edu/jefferson/calfieri/economics/SupDemand.html
- *Lemonade Stand* – This is a variation of the classic simulation game where students must make decisions to increase profits. http://www.coolmath4kids.com/lemonade

Learning Objectives and Standards:
Students will be able to:

- define the terms supply and demand.
- identify what happens when demand exceeds supply.
- identify what happens when supply exceeds demand.
- explain how supply and demand affect choices
- explain how supply and demand affect prices
- apply concepts in a simulation

History and Social Science SOL CE.9

Materials:
3-4 boxes of colored markers
Stopwatch
Student Handouts:
Coloring pages for Introductory Activity – 1 per student
EconoBucks ($100 for each student, extras for students who finish first)

Teacher Preparations:

- ? Make copies of coloring sheets. You need one sheet per student. Only make one copy of the tree sheet, then equal amounts of the other sheets.
- ? Gather three or four boxes of markers, depending on the number of students. Take the red markers out of all boxes except one.
- ? Copy EconoBucks on green paper. Cut out.

Introductory Activity:

1. [Note to the Teacher: The purpose of this activity is to demonstrate the concepts of supply and demand. All coloring sheets require red; however, only one red marker is available. On the other hand, only one coloring sheet requires brown, but three or four brown markers are available.]
2. Give each student $100 in Econ Bucks and a coloring page.
3. Instructions for the activity: Your first assignment will be to complete this coloring page, and you will earn "bucks" depending on how fast you can get your picture colored and how much money you have left when it is completely colored. I'm going to auction off the markers, and you will be able to purchase one marker at my auction. You will have one minute to color with that marker. After I call time, you will have 15 seconds to buy and sell markers among your classmates, then another minute to color. We will repeat that sequence. No deals may be made during the coloring time.
4. Before beginning the auction, tell students that they may not begin coloring until time is called. Auction off the markers. [Note to the teacher: Make a production of selling the markers from each box, but wait until the 3rd box to sell the red marker. Since students know the colors that they need, they should not try to purchase other markers; however, offer them for sale to illustrate the point.] After selling the markers, remind students that they will have the opportunity to sell their marker to others, charging anything they like.
5. Give students one minute and then call time. Give students 15 seconds to buy/sell markers, then another minute to color. Repeat. By the 3rd time you should have some students with finished pictures, give each of them $20 in Econ Bucks. For the 4th sequence, let each student auction their marker to the rest of the group, then give students one minute to color. Give students with finished pictures another $10.
6. Discuss what happened during the auction. Ask students to explain why the markers sold for different prices, developing the concepts of supply and demand. If students are just beginning the unit or to reinforce the meanings, students may want to visit the website: http://socialstudiesforkids.com/articles/economics/supplyanddemand1.htm. Have students read the descriptions of the terms. What does this have to do with our markers? What was our supply of red markers? (1) What was the demand? (Number of students in class). What was our supply of brown marker? (3 or 4) What was the demand? (1) How did this affect the sale of the markers? Discuss differences.

Learning Activities:

1. Show the video segment, *The Marketplace: Supply and Demand*, to students. Allow further discussion on supply and demand. This will provide the link to the lemonade stand simulation.
2. Tell students that they are going to build a simulation of a lemonade stand. Have the

students work in their groups to develop the relationships that they need to consider. What will affect the amount of lemonade needed? The price that you can charge for it? The amount of money that you can make? Work with students to develop causal loop diagrams illustrating the relationships.

3. Once relationships have been established, use STELLA to build a simple simulation as a group. Use lemonade and money as the stocks and limit the factors that are considered to cost of lemonade and sale price. Put students back in groups to run the model and consider any problems.
4. Once problems have been worked out, each group can expand their model to consider one other factor such as weather, population of the area, etc. Each group will present its findings to the class.

Culminating Activity:

There are several different Lemonade Stand games on the web that students can use – one such game is available at http://www.coolmath4kids.com/lemonade. Let students play through the game, then bring them together as a group to discuss the decisions that they made and how the decision affected profits. Have them predict changes that should be made and then run the simulation again and see how the changes affected profit. Discuss.

Assessment:

Assess students' understanding throughout the lesson with questioning and observation of class and group participation. A rubric can be developed to assess the simulation portion of the lesson.

Cross-curricular extensions:

- Math: Have the students record data each day for the Lemonade Stand. Set up a spreadsheet to calculate profit and loss, then graph and analyze results. (C/T 8.1, Math 7.21)
- English: Have students create advertisements for their lemonade stand, utilizing various persuasive techniques. (English 7.3)
- Special Needs Students: Provide appropriate modifications for the special needs students based on the IEP. The use of video supports visual and auditory learning. Hands-on activities and simulation games promote understanding.

Research on Simulation and Modeling:

Simulation and modeling provides opportunities for students to participate in engaged learning projects while constructing the knowledge necessary for investigating and understanding the complexities of today's world (Munroe and Zaritsky, 1999). Students are given the opportunity to apply knowledge to real-world situation (Means, B., et.al., 1993) and to gain a deeper understanding of the concepts (Johnson, 2003). The use of simulation and modeling can help establish a frame of reference for the facts and help make them relevant to real life. Rather than focusing on memorizing a bunch of facts, the emphasis is on the synthesis of ideas and concepts by integrating the facts. Students are able to visualize the impact of changes on a system to better understand the interdependencies of the system (Johnson, 2003).

Simulation and modeling provides a perfect opportunity for students to work collaboratively. Cooperative learning promotes higher-order thinking and communication among the learners. Students must interact with each other, the teacher, and perhaps even the community to gain the desired results. Learning becomes student-centered as students work together to figure things out (Lyneis and Fox-Melanson, 2001).

Improving student learning is the goal of any educational program. Simulation and modeling has the capability of improving learning, not by increasing the number of facts that the student has memorized but by promoting a deeper understanding of subject material while developing critical thinking and problem-solving skills that are so critical to the student's development.

Johnson, T. (2003, Spring). Scholastic modeling and simulation. *The MSIAC's M&S Journal Online,* 4(3). Retrieved April 16, 2003 from http://www.msiac.dmso.mil/journal/SP02/jasp33.html

Lyneis, D. and Fox-Melanson, D. (2001). *The Challenges of infusing system dynamics into a K-8 curriculum.* Retrieved May 4, 2003 from http://www.clexchange.org

Means, B., Blando, J., Olson, K., Middleton, T. (1993). *Using technology to support educational reform.* Retrieved May 4, 2003 from http://www.ed.gov/pubs/EdReformStudies/TechReforms/title.html

Munroe, M. and Zaritsky, R. (1999). *Learning through dynamic simulations.* Retrieved April 16, 2003 from http://archive.ncsa.uiuc.edu/edu/icm/index.html