NEXT YEAR'S SEEDS

GRADE: 6-8 **SUBJECT**: Mathematics

NATIONAL STANDARD(S) **THEME:** Economics
(6-8) MA: 1.4, 1.7, 1.8, 1.12, 9.1-2

FOOD AND FIBER TOPIC: IV-A,B,D

LEARNER OBJECTIVE
The student will play a game which will help explain variables affecting the food supply.

BACKGROUND

If you mow lawns to earn money in the summer, you probably know you can't spend all you earn. Some of the money has to be set aside for buying gasoline to keep the lawn mower running. If you're a really good businessperson, you'll also set some money aside for repairs that might need to be made or even for buying a weed eater to expand your business.

Farmers are the same way. Every time they earn money from the crops or livestock they produce, they have to put part of it back into the business. Some of the money goes to repairing or replacing equipment. Some of it goes to buy new equipment to improve next year's crop. Some of the money buys fertilizer or seed.

Our country's first farmers didn't sell their crops for money. Without advanced technology to help them, they were able to raise little more than what they needed to feed their families. If there was any left over they bartered with other farmers to get crops or livestock they didn't raise themselves. In addition, a portion of every crop had to be set aside as seed so they could grow a new crop in the coming year. No matter how low the food supply got during the winter, they knew they had to stay out of the wheat, corn, barley or other seeds they had set aside to plant.

Many immigrants carried seeds with them in pouches so they could get a good start in the New World. Seeds were not available like they are today, sold in colorful paper packages at the local grocery store. Even if they had been, there was little money available for buying them. Instead, early American farmers bartered with the Indians or other farmers to get what they needed. Sometimes they used catalogues to order seeds from England.

Over the winter seeds had to be stored in a cool, dry place, possibly in a cellar or in a sealed container buried underground. Careful farmers saved twice as much seed as they would need for the next year's crop, just in case there was a crop failure.

STEP-BY-STEP INSTRUCTIONS

1. Bring a pound or two of sunflower seeds in their shells to class, along with five or six small paper or Styrofoam cups and a bowl large enough to hold the seeds. Make several copies of the situation cards printed on the following page, and cut them along the dotted lines.
2. Divide your class into groups of five or six, and have each group sit in a circle. Give each group one cup.
3. One person from each group should count the group members and place twice that many seeds in the cup. Then have each group pass the cup around so each group member can take one seed to eat (or give it to someone else or discard it).

4. Explain that the seeds in the cup represent the year's harvest and that what remains in the cup represents the seeds needed to raise next year's crop.
5. After each member has taken one seed, have the last person count the number of seeds left in the cup and add two times that number to the cup. Then have the person sitting to that person's left draw a situation card from the pile and follow the instructions printed on it. Make sure group members take turns following the instructions on the cards so all get a chance to do the necessary math. Numbers may be rounded off, if necessary.
6. Before continuing with instructions from another card, have the group pass the cup around again so each player can get another seed to eat. When there are not enough seeds left for every group member to have one, that group must drop out of the game.
7. After the group has drawn all 10 of the cards, have the group figure its profit by counting how many seeds are left in the cup after each group member gets another one to eat. The group with the largest profit wins the game.

RELATED ACTIVITIES

1. Have students make their own situation cards and repeat the game.
2. Seeds and other food crops are sustainable natural resources. Have students list other natural resources that are sustainable (forests, people, animals, sustainable alternatives to fossil fuels) and what kinds of conservation methods would preserve them for the future.
3. Have students discuss the expression "seed money" in terms of what they have learned about early farmers saving seeds for the coming year.
4. Play the game again, but have each group keep records of its gains and losses and create graphs to illustrate them.
5. Have students discuss the value of having markets where seeds can be sold in exchange for dollars to buy other items.
6. Have students discuss the saying "A penny saved is a penny earned" in relation to what they learned from the above activity.

RESOURCES

Student Books

Artman, J. (1987). Pioneers. Good Apple.

Douglas, W. O. (1994). Muir of the Mountains. Sierra Club Books for Children.

Greenwood, B. & Collins, H. (1995). A Pioneer Sampler: The Daily Life of a Pioneer Family in 1840. Ticknor & Fields.

Kalman, B. (1982). Early Settler Children. Crabtree.

Lawlor, L. (1986). Addie Across the Prairie. Whitman.

Lawlor, L (1991). Addie's Dakota Winter. Whitman.

Miller, B. M. (1995). Buffalo Gals, Women of the Old West. Lerner.

Sabin, L. (1985). Johnny Appleseed. Troll.

Seuss, Dr.. (1971). The Lorax. Random.

Teacher Resources

International Apple Institute, 6707 Old Dominion Road, McLean, VA 22101.

International Banana Association, 1101 Vermont Ave, NW, Ste. 306, Washington, DC 20005.

"The Spice Trading Game," McCormick and Company, Consumer Affairs Department, 211 Schilling Circle, Hunt Valley, MD 21031, 1-800-632-5847 (board game that

takes players around the world collecting cargoes, dodging pitfalls and delivering the precious spices to the right destination, $17).

Pillsbury, Richard (1996) Atlas of American Agriculture: The American Cornucopia. Macmillan

Related Internet Websites

Foreign Agricultural Service (FAS). Information about global supply and demand, trade trends, and emerging market opportunities**.** *http://www.fas.usda.gov*

Food Safety and Inspection Service. Governmental service responsible for ensuring that meat and poultry imported into the US are produced under standards equivalent to those of the US for safety, wholesomeness and labeling accuracy. *http://www.usda.gov/agency/fsis/xborder.htm*

GLOBE. Program brings together students, teachers, and scientists from around the world to study the environment. Students perform environmental observations, such as air temperature and precipitation and share their data via the Internet. *http://www.glove.gov*

EVALUATION

Were students able to play the game successfully and understand its connections to real world situations?

ACKNOWLEDGMENT

This lesson adapted from Oklahoma Ag in the Classroom, Department of Agricultural Education, Communications and 4-H Youth Development, Oklahoma State University, Stillwater OK 74078.

Name _____

Next Year's Seeds

Your tractor broke down in the middle of harvest. Give up 1/6th of the seeds in your cup. (If necessary, round to the nearest whole seed.)

Mice have eaten half your supply of seeds. Give up half the seeds in your cup.

Your tractor broke down and can't be repaired. You'll have to buy a new one. Give up 3/4th of the seeds in your cup.

Weather conditions are just right for your crop. You have enough left over to sell. Multiply the number of seeds in your cup by 1.33, and add that number to your cup.

Several days of rain in the middle of the season cause your crop to rot in the fields. Give up 2/3 of your seeds.

Your neighbor offers to lease you his field for the season. Multiply the number of seeds you have in your cup by 1.65 and add that number to your cup.

Flooding destroys the peanut crop in Georgia and causes the price of peanuts to go up. Multiply the number of seeds in your cup by two and add them to your cup.

Your hired hand goes away to college and you have to train someone new. Give up 1/8 of the seeds in your cup.

Your new equipment allows you to plant 10 percent more. Increase the number of seeds in your cup by 10 percent.

The price of gasoline goes up. Multiply the number of seeds in your cup by 5 percent and subtract that number from your cup.

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Food & Fiber Systems Literacy
Agricultural Education, Communications, and 4-H Youth Development
Oklahoma State University, Stillwater, OK