Next Year`s Seeds

Grade Level: 1-3

Approximate Length of Activity: One-two class periods

Objective

Teacher

1. Explain the strategy of farmers and businesses.

2. Have students practice number operations while playing a game.

Students

1. Practice number operations while playing a game that demonstrates variables that affect farming.

2. Learn about the business of farming.

Michigan Content Standards: (Math) N.MR.01.10; N.FL.01.15; N.ME.02.18; N.MR.02.09; N.ME.03.19; N.FL.03.06

Vocabulary

- **Crop**– cultivated plants or agricultural produce, such as grain, vegetables or fruit, considered as a group.
- **Livestock** – domestic animals, such as cattle or horses, raised for home use or for profit, especially on a farm.
- **Immigrant**- a person who leaves one country to settle permanently in another.
- **Barter**- to trade one thing for another without the use of money.

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 business person, you'll also set some money aside for repairs or even for buying additional equipment 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 repair or replace 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 Indians or other farmers to get what they needed. Sometimes they used catalogues to order seeds from England, but those were expensive.

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.

Materials Needed

- 1-2 pounds untreated sunflower seeds in shells
- 5-6 small paper or Styrofoam cups
- Large bowl
- Calculators
- Scrap paper
- Pencils
- Situation cards for student groups

Activity Outline

1. Play the attached game, as follows:
   - Make several copies of the situation cards called "Next Year's Seeds" worksheets and cut them along the dotted lines. There are two sets of cards-one for practicing addition and subtraction and one for practicing multiplication and division. (Hint: Laminate the cards after labeling each one on the back to indicate which set it belongs to. Keep the set of laminated cards in plastic bags.)
   - Divide your class into groups of five or six, and have each group sit in a circle. Assign a recorder for each group and provide paper, pencils and calculators. Give each group a bowl of seeds. One person from each group should count the group members and place five times that many seeds in the cup.
   - Explain that the seeds in the cup represent the year's harvest and are needed to raise next year's crop.
   - The person sitting to the left of the recorder is to 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.
   - As in real life, students may run out of resources before they get very far into the game. At that point students must decide whether to borrow seeds so they can continue or quit the game.
   - 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. The group with the largest profit wins the game.
2. Have students make their own situation cards and repeat the game.
3. Play the game again. Create graphs to illustrate gains and losses.

Discussion Questions

1. Why is it important to put money back into a business?

2. Did our country's first farmers use money to buy things with?

3. What does it mean to borrow something?

4. Do you save your money? Do you borrow money?

Related Activities

1. Activities related to social studies.
   - After students have finished playing the game, lead a discussion about some real life situations faced by those responsible for growing food for all of us. Invite a farmer to class to answer questions.
   - Seed 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.
   - Have students discuss the expression "seed money" in terms of what they have learned about early farmers saving seeds for the coming year.
   - Discuss bartering. Have students discuss the value of having markets where seeds can be sold in exchange for dollars to buy other items.
   - Visit a nearby seed and feed mill.

2. Activities related to language arts.
   - Have students listen while you read the background information. Read each paragraph slowly, and stop to ask questions.
   - Provide copies of the Reading Page for students to read independently. Have students map or web the information and use a dictionary to look up hard words.
   - Have students write letters requesting free seed catalogs. (Search online for addresses.)
   - Have students discuss the saying, "A penny saved is a penny earned" in relation to what they learned from playing the attached game.
   - Have students interview some older gardeners in your community to find out about seed saving practices.

3. The lesson "Where Would We Be Without Seeds" located in the science section of this curriculum guide.

Resources

1. "One Grain of Rice: A Mathematical Folk Tale" by Demi

2. "A Pioneer Sampler: The Daily Life of a Pioneer Family in 1840" by Barbara Greenwood and Heather Collins

3. "Addie's Dakota Winter" by Laurie Lawlor

4. "Farmer's Market: Families Working Together" by Marcie R. Rendon and Cheryl Walsh Bellville

5. "Tops & Bottoms" by Janet Stevens

Next Year`s Seeds

Reading Page

Our country's first farmers didn't sell their crops for money. They didn't have tractors and other machinery to help them. Most farmers raised just enough 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. A portion of every crop had to be saved as seed so they could grow a new crop the next year. No matter how low the food supply got during the winter, they knew they couldn't eat the wheat, corn, barley or other seeds they had saved 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 grocery store. Even if they had been, there was little money for buying them. Instead, early American farmers traded with the Indians or other farmers to get the seeds they needed. Sometimes they used catalogues to order seeds from England. Those seeds were very expensive.

Over the winter, seeds had to be stored in a cool, dry place, in a cellar or 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.

Name:_____

Next Year's Seeds

Addition/Subtraction

Your tractor broke down in the middle of harvest. Take 5 seeds from your cup.

Your tractor broke down and can't be repaired. You'll have to buy a new one. Take 12 seeds out of your cup.

Several days of rain in the middle of the season caused your crop to rot in the fields. Take 13 of your seeds out of your cup.

Flooding destroys the corn crop in Iowa and causes the price of corn to go up. Double the number of seeds in your cup by adding as many seeds to your cup as you have in your cup.

Your new equipment allows you to plant more seeds. Increase the number of seeds in your cup by 14.

Mice have eaten half your supply of seeds. Take half of your seeds out of your cup.

Weather conditions are just right for your crop. You have enough left over to sell. Add 15 seeds to your cup.

Your neighbor offers to lease you his field for the season. You will need more seeds. Take 18 seeds from your cup.

Your hired hand goes away to college and you have to train someone new. Take 8 seeds from your cup.

The price of gasoline goes up. Take 7 seeds from your cup.

Name:_____

Next Year's Seeds

Multiplication/Division

Your tractor broke down in the middle of harvest. Divide the number of seeds in your cup by 5 and take out that many seeds.

Your tractor broke down and can't be repaired. You'll have to buy a new one. Divide the number of seeds in your cup by 3 and take out that many seeds.

Several days of rain in the middle of the season caused your crop to rot in the fields. Divide the number of seeds in your cup by 6 and take out that many seeds.

Flooding destroys the corn crop in Iowa and causes the price of corn to go up. Multiply the number of seeds in your cup by 5 and add that many seeds to your cup.

Your new equipment allows you to plant more seeds. Multiply the number of seeds in your cup by 3 and add that many seeds to your cup.

Mice have eaten half your supply of seeds. Divide the number of seeds in your cup by 2 and take out that many seeds.

Weather conditions are just right for your crop. You have enough left over to sell. Multiply the number of seeds in your cup by 4 and make sure you have that many in your cup.

Your neighbor offers to lease you his field for the season. You will need more seeds. Divide the number of seeds in your cup by 10 and subtract that number from your cup.

Your hired hand goes away to college and you have to train someone new. Divide the number of seeds in your cup by 2 and take out that many seeds.

The price of gasoline goes up. Divide the number of seeds in your cup by 3 and take out that many seeds.