

Profit from Pumpkins

Grade Level: K-3

Approximate Length of Activity: 40 minutes

Objective

Teacher

1. Provide a cooperative learning experience.
2. Use a practical application of math in agribusiness.
3. Help students learn about pumpkins.

Students

1. Gain an understanding of a small business.
2. Practice grouping and counting by tens.
3. Learn about pumpkin growth.

Michigan Content Standards: (Math) N.ME.00.05; N.ME.01.01; M.UN.01.04; M.MR.02.13; M.UN.02.07; N.ME.02.04; N.ME.02.01; N.MR.03.09; N.MR.03.10; N.ME.03.21

Introduction

The size and quality of a pumpkin crop is influenced by many different factors. These factors are water, temperature, insects, disease, fertility, soil type, pollination, plant population, variety of pumpkin, weeds, etc. To grow pumpkins, one first needs to conduct a soil test on the patch where the pumpkin seeds will be planted. A soil test will determine the type of soil and what nutrients are present in this soil. Then the planter will know what type of nutrients (fertilizers) to add to the soil.

After conducting the soil test and adding the needed nutrients, the pumpkin seeds may be planted when the ground temperature is 60-65 degrees F and the last frost has occurred (usually May or June). The seeds should be planted five to eight feet apart, and the rows should be six to eight feet part. Pollinating the plants needs to be done about eight to ten weeks after planting. The plants can be pollinated by bees or by hand.

After planting and until harvesting, the pumpkins need to receive an adequate amount of rainfall and hoeing or hand weeding to ensure a good bed. One can harvest the pumpkins after the shell is completely hardened. (Pumpkin growth usually lasts between 90-110 days.) Pumpkins should be stored in a cool, dry place to keep from rotting.

For this lesson, the students are to set a price for their pumpkins, estimate how many seeds are in the pumpkin, and then decide if planting and selling pumpkins could be a profitable business. Many inputs for the business should be considered, such as cost; cost of pumpkin seeds, fertilizer, people to plant seeds and care for them, people to pick the pumpkins, people to sell the pumpkins, and decisions made as to where and when to sell the pumpkins and how much to sell them for.

Materials Needed

1. Copies of "From Seed to Pumpkin" worksheet
2. 4 pumpkins with the "lids" cut out
3. 40 paper cups
4. 4 gallon-size resealable bags

Activity Outline

1. Divide the class into 4 cooperative learning groups and hand out the worksheet "From Seed to Pumpkin" to each student.
2. Give each group a pumpkin, 10 cups, and one resealable bag.
3. Using the worksheet, have each group record a reasonable price for its pumpkin.
4. Have each group record its estimate of how many seeds are in the pumpkin.
5. Each group should clean out their pumpkin and sort the seeds into cups by groups of 10. When all 10 cups are filled, pour the 100 seeds into a resealable bag, keeping tally of how many seeds are emptied into the bag. Repeat this process until all seeds have been counted.
6. Record how many seeds were actually in the pumpkin.
7. Discuss how many pumpkins could be grown from one pumpkin.
8. Help each group calculate how much money their pumpkin could produce by multiplying the price they would sell their pumpkins for by how many seeds were in it.

Discussion Questions

1. Could raising and selling pumpkins be profitable? Why or why not?
2. What would you need to do to set up a business of selling pumpkins?
3. How did your group work together when counting the seeds?
4. How did putting the seeds in groups of ten help in tallying the total number of seeds?

Related Activities

1. Brainstorm uses of pumpkins.
2. Dry the pumpkin seeds, bake them, and eat them.
3. Plant pumpkin seeds.
4. Learn the growth sequence of a pumpkin.
5. Visit a local pumpkin farm.
6. The lesson "Where Would We Be Without Seeds?" located in the science section of this curriculum guide.

Book Resources

1. "Pumpkin, Pumpkin" by Jeanne Titherington
2. "From Seed to Jack O Lantern" by Johnson, Lothrop, Lee and Shepard, Co.
3. "The Pumpkin Patch" by King, Dutton Children's Books

Acknowledgement: Adapted from "Profit from Pumpkins" Illinois Farm Bureau® Agriculture in the Classroom.

From Seed to Pumpkin



1. The price of our pumpkin is \$_____.
2. We estimate our pumpkin has _____ seeds.

Now it is time to clean out your pumpkin! Sort the seeds and place 10 seeds in each cup.
Pour the seeds into your resealable bag.

3. How many seeds did your group put in the bag? _____
4. Our pumpkin had _____ seeds in it.
(amount)
5. We could grow _____ pumpkins from this one pumpkin!
(amount)
6. The price we would charge for one pumpkin is \$_____.
7. How much money would your group make if you sold these pumpkins? _____
(Hint: Multiply the price you would charge by how many pumpkins you could produce.)