Kristen Forrest, Denise Schnabel, and Margaret Williams

Celebrate the Harvest

The "Math by the Month" activities are designed to engage students to think like mathematicians. Students may work on the activities individually or in small groups, or they may be used with the whole class as problems of the week. No solutions are suggested so that students will look to themselves for mathematical justification, thereby developing the confidence to validate their work.

This month's activities integrate food and harvest time with mathematical ideas. Students will experience mathematics in real-world contexts and see the value of mathematics in everyday life. ▲

WEEKLY ACTIVITIES

CELEBRATE THE HARVEST: K–2 **OCTOBER 2005**

3 **Snack time.** Estimate how many goldfish or animal crackers are in a cup. Count them. Estimate how many crackers are in a box. How many crackers would each child in your class receive if everyone got the same amount? Distribute them evenly to see how close you came.

10 **Veggie math.** Bring in cans of vegetables. Sort them in different ways. Put the cans in order from biggest to smallest. How did you decide which was biggest? Did you think about height, width, or weight? Use masking tape to make a grid on the floor. Create a real bar graph of the different types of vegetables in your class collection. Donate the vegetables to a local charity when you are done with your class activities.

17 **Silver where?** At dinnertime we usually place 3 pieces of silverware—a fork, a spoon, and a knife—at every dinner plate. How many pieces of silverware would you need for 2 plates? 5 plates? 10 plates? Describe the pattern. Can you estimate the silverware needed for 12 settings without actually counting?

24/31 **That's odd.** There are 31 days in the month of October. Is 31 an odd or even number? Explain your thinking. Use pictures, numbers, or words to prove your answer. Do the same thing for the other 11 months of the year. Make a bar graph showing the number of days in each month. Can you think of another way to represent this information?

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WEEKLY ACTIVITIES

CELEBRATE THE HARVEST: 3–4 **OCTOBER 2005**

3

To the market. A farmer was selling his produce at the market. He had 50 small baskets with 3 tomatoes in each basket. By the end of the first day he had sold half of his tomatoes. How many tomatoes did he start with? How many tomatoes did he have left after the first day? If he sold 21 more tomatoes the following day, how many would he have left?

10

"Corny" math. October is harvest time for many farmers who grow corn. If you look closely at an ear of corn, you will see that the kernels are in rows from top to bottom around the cob. If there are 18 rows around the cob and each row has 40 kernels in it, how many kernels are on the entire cob? Tiny ears of corn are used in Asian dishes. If a small ear of corn has 126 kernels on it, how many kernels are in each of the 18 rows? Show your work with pictures, words, or numbers.

17

An apple a day . . . The apples are ripe and ready to be picked. As the farmer begins picking the apples, he notices a pattern. He takes 4 from the first tree, 7 from the second tree, and 10 from the third tree. If this pattern continues—4, 7, 10, and so on—how many apples will he get from the 10th tree? How many trees will the farmer have picked before he has 46 apples? Describe the pattern in mathematical terms.

24/31

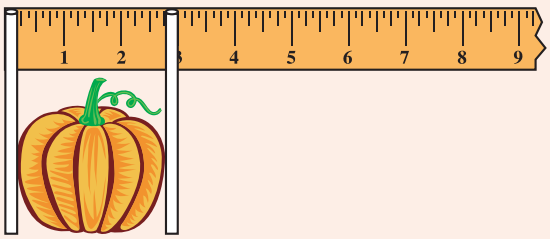
Harvest for a feast. The very first feast at Plymouth Rock was actually in October, not November, when Thanksgiving is traditionally observed in the United States. It took place in the year 1621 and was celebrated by the pilgrims and the Wampanoag Indians. How many years ago did this happen? How did you get your answer?

WEEKLY ACTIVITIES

CELEBRATE THE HARVEST: 5–6 **OCTOBER 2005**

3

Pumpkin pi. Carefully measure the circumference of a pumpkin. Use a caliper to find the diameter. You can make a caliper by attaching one plastic straw to a yard or meter stick at one side of the pumpkin, perpendicular to it, and a second straw from the other side of the pumpkin to the meter stick to measure the width. Divide the circumference by the diameter. Is the result about 3.14? You have discovered pumpkin pi!



10

Veggie-tables. Bring in cans of vegetables. Sort the cans by nutritional content (vitamins, proteins, calories, sodium). Compare that data with the nutritional value of fresh vegetables. When your class completes the project, donate the cans to a local food collection drive.

17

Raising raisins. Wash a large bunch of green grapes. Remove them from the stem and weigh the grapes carefully. Record the date and weight. Place the grapes on a cooling rack and cover them with a kitchen towel. Observe and record changes in appearance and weight over time. What is the percent of weight loss after one week? Two weeks? What factors can affect the dehydration process?

24/31

Family favorites. Bring in a family member's favorite recipe. Determine how many servings the recipe makes. Calculate the amount of ingredients that would be necessary to make the recipe for your entire class. How much of each ingredient would you need to make enough of the recipe for your entire school?